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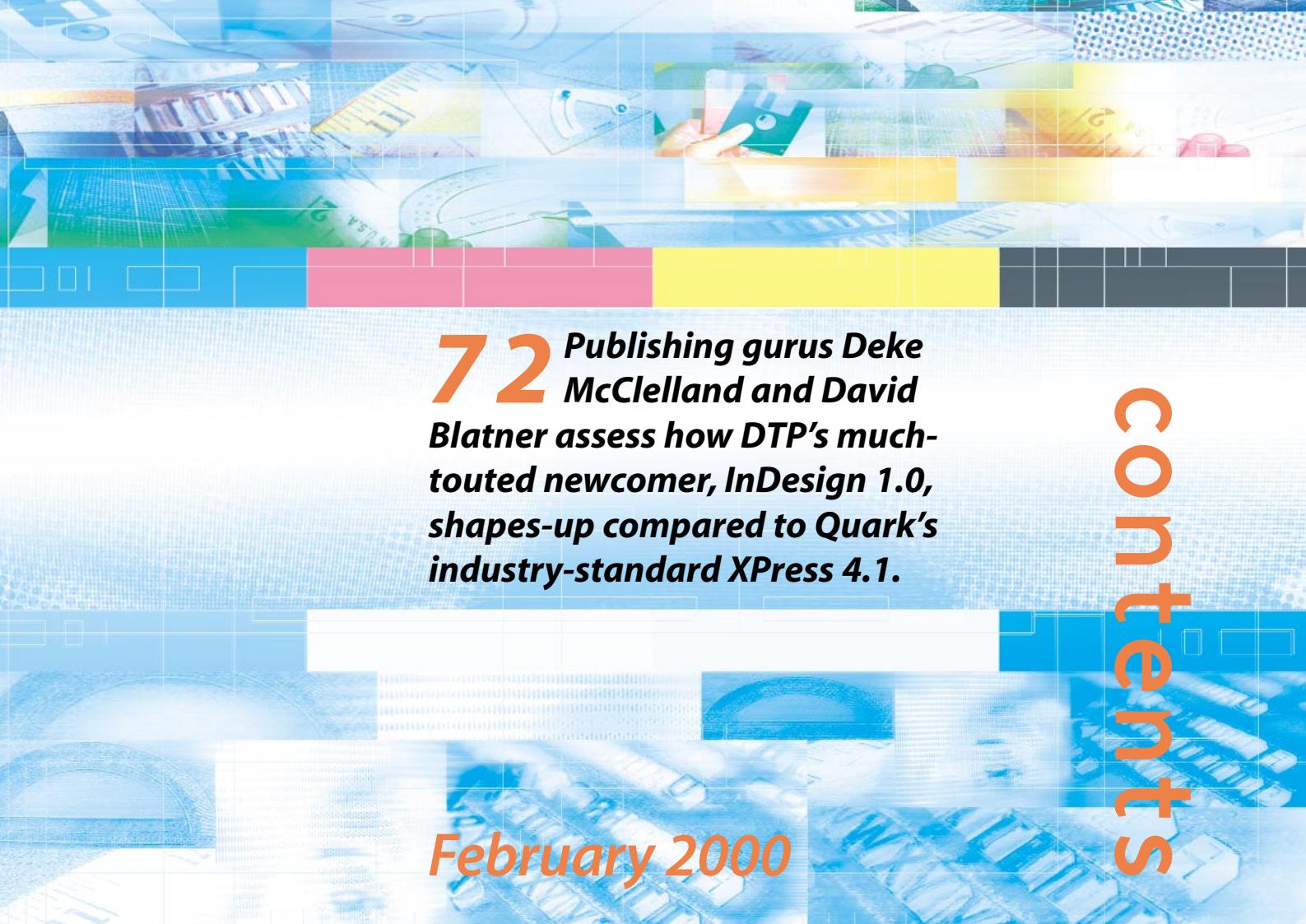
Crystal Macs
A history of the digital future

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Revamped Power Macs on trial

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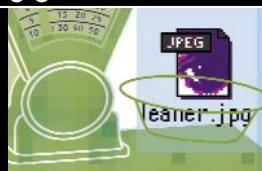
contents

February 2000

features

read me first

Simon Jary, editor-in-chief

In my January 2000 column I suggested that maybe it's time for us all to give up on the Mac's tired "desktop" metaphor. Indeed, with Microsoft's slavish copying of Apple's – already secondhand – graphical user interface (GUI), nearly all computer users labour on virtual desktops. Must we forever work thus? Or could this new year bring OS cheer to those of us who think today's desktop analagy faintly ludicrous?

When it was first dreamed up – I guess in Xerox's PARC laboratories, where just about everything digital, bar the screensaver, was invented – the desktop metaphor must have seemed a rum idea.

"People will know how to use their computer even when they turn it on for the first time," bubbled the bearded XeroxPARC whitecoat. "They can file their documents in folders, and navigate with that mouse-like bit of plastic that Dirk from Hardware showed me last week."

"Hey, and when they want to delete their files, they could throw the documents in a trash can!" joined in the labs joker.

"Ha ha ha ha!" all the boffins gaffawed.

"Or we could call it a wastebasket…" piped up Nigel, the British intern.

"Get outta here, you stoopid limey!" the other engineers shouted back, throwing screwed up code pages and prototype joysticks at his greasy head.

Not much work was done at Xerox's research centre that day, as all the software guys rushed to the ice-cream parlour to discuss this cracking desktop idea – and invent personal computing for the masses in their lunch hour. The desktop OS was born, and with a little help from Apple's Macintosh computer – and Bill Gates' innovation/imitation – it wasn't long before we were all filing document icons in folder icons, and deleting other icons in a rubbish-bin icon.

Now, we should consign this old-style GUI notion to that real wastebasket under our actual desks. Take a look at your Mac's so-called desktop. There's the Wastebasket – or Trash if you've installed Mac OS 9 – and there's… a hard-disk icon. We'll allow for people's imagination here – of course, that hard-disk icon resembles a filing cabinet, where I'll keep all my folder and document icons. Apart from these icons, the Mac OS looks nothing like a regular work desk. The blind on my window doesn't have 'File', 'Edit', and 'View' written on its top. And there's certainly no rainbow-coloured Apple within reach of my left hand.

The desktop metaphor was a useful one, but those PARC engineers, Apple whizkids and Microsoft drones didn't follow it through past the document-filing idea and rubbish-bin icon. Where's the wood-effect desktop pattern, with hard-to-shift coffee stain? Where's the bookshelf, intray or stapler?

The Mac's menubar, for instance, is simply DOS on a washing line. The Control Strip at the bottom of your screeny desk thing is even simpler – a kind of utility belt that's a better stab at an intuitive GUI, but bugger-all to do with desktops or wastebaskets.

When graphics guru Kai Krause was in his heyday, he once revealed to me that Apple had asked him to help redesign the Mac's interface. It was one of old Apple's very few pieces of good luck that Kai said "nein".
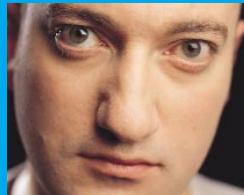
At the time, Kai was king of the weird interface – Bryce, KPT and Goo were all decidedly odd, leaving users with lumps of spherical rock to swivel, and glowing orbs to fiddle with just to save a simple file. Kai's interface were fun, in a *Crystal Maze* kind of way. He did show me one possible interface, where the desktop metaphor was adapted to have more sophisticated layers – basically, it was the standard desktop but with no filing cabinet and all your folders and documents strewn over your screen as if you'd just turned on a fan to full blast and aimed it at your neatly stacked paperwork.

So, I'm asking all *Macworld* readers to dream up some new concepts and metaphors for Apple's next operating system after Mac OS X, which retains the desktop despite some Windows-like nips and tucks.

The most popular possible interface revision is a 3D GUI, where you can "reach in" and control your documents in "space". This sounds like fun, but what if your Mac crashed while you had your arm in further than James Herriot in calfing season?

How about another virtual 3D space, based on popular shoot-'em-ups such as Marathon and Quake? You'd be armed with a paper knife and date stamp, taking care to hide secret documents in rooms armed with booby traps even Indiana Jones couldn't survive. You could flame-throw unwanted files, and interact with fellow network users by accessing their data labyrinths. Anyone dumb enough to let in a virus monster would quickly find the network manager appearing from behind a column with a fully armed plasma gun.

Maybe a gardening metaphor would work. Plant your files in fresh Mac manure, swap the toolbar for a tool shed. Or a sewing kit GUI for old ladies (knit one, PERL one), or a pub-type interface for the lads ("Error: Sorry, your hard barrel needs changing"). Wardrobes, gymnasiums, beach parties… the world (and beyond) is your playground when it comes to inventing the next chapter in personal computing. Join in the debate at the Macworld Online Forum (www.macworld.co.uk/forum) or email me at editor@macworld.co.uk. MW

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83 online competition

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an iBook

55

95 competition

WIN
OKI DP-5000
colour desktop
printer

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Macworld

The ultimate reference guide and news source for the Macintosh market.

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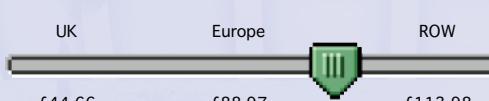
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New User

New Group

Open

Duplicate

Delete

More winners, more great prizes

Congratulations to Mrs S Austin, from Derby, who was the winner of November's **Xante** Accel-a-Writer competition.

There were even more lucky winners – who cashed in on November's *Macworld's* Jackpots bonanz. They are:

Band in a Box: Mr W D Read, East London; Mr A Weaver, Sheffield; and Mr C Webb, Ossett, West Yorkshire

Keyspan DMR: Mr D Wishart, Epping, Essex; Mr S Brockbank, Edinburgh, Midlothian; Mr J Robinson, south east London; Ben Whitley, Abbeydale, Gloucestershire; and Mr William Maddicock, Ludlow, Shropshire.

Family Tax: Ms P Atwell, Oxfordshire; Mr John Stack, east London; Mr C Stonell, Reading, Berkshire; Mr Greg Birch, Pinner, Middlesex; Mr Wyn Parkin, Blackwood, Gwent; Mr R Picton, High Shincliffe, Co Durham; Mr Bob Wood, Tadworth, Surrey; Mr P Ginger, Hornchurch, Essex; Mr B Hoskin, Torpoint, Cornwall; and Mr Mark Disley, South West London

After Effects 4.1: J Chapman, north west London; Mr C Dart, Sutton, Surrey; Mr J Kerr, Dungannon, Co Tyrone; Mr G Hilton, Preston, Lancashire

Macworld JACKPOT

IDG World Leaders in IT Publishing

Join in the debate, and get your queries answered at the Macworld Forum (**www.macworld.co.uk/forum**).

This month's CD features full trials of Canvas 7 and PiXELS:3D 3.2, the latest UK English version of QuickTime 4, plus a great array of demos, shareware, games and updaters. Vic Lennard gets all arty…

Install Me
Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ **QuickTime 3.0.2**
Many of the demos need this installed. It gives you QuickTime 3.0.2 plus the MPEG, VR, Musical Instruments and PowerPlug add-ons.

■ **Acrobat Reader+Search 4**
Install this version to be able to read many of the on-screen manuals.

■ **StuffIt Expander and DropStuff**
Versions 5.5, 5.1.2 and 4.5 are included.

■ **Also included**
A number of useful utilities such as Apple Game Sprockets 1.1.4, OpenGL 1.1.2, InternetConfig 2.0 and Apple Appearance plus essential items such as Apple Disk Copy and Drive Setup.

Some of the program's on this month's CD need QuickTime 4…

QuickTime™

… so we've included the UK English version of QuickTime 4.02. To install, drag the folder to your machine, then drag-&-drop the QuickTime Install Cache file on to the QuickTime Installer and follow the on-screen prompts. Chances are that the installer will need to access Apple's QuickTime Web site for a few small files during the installation. Make sure you are connected to the Internet before starting.

Canvas 7

Canvas has been taken to a new level of functionality, placing unprecedented creative control right into your hands. Now you can unleash your creative genius with the power of Canvas 7's exclusive Sprite technology and over 150 other new features. Deneba's exclusive SpriteLayers and SpriteEffects technologies make it easy and fast to create intricate illustrations, awesome photo montages, perfect page layouts and killer Web pages complete with mouse-over buttons and animated GIFs. Creating brochures, signs and marketing material? Designing art and packaging for compact discs? Dreaming up graphics for your Web site? You can do it all in Canvas.

Run Canvas 7 as a save-disabled demo or log on to Deneba's Web site (www.deneba.com/evaluate) to get a serial number for a 15-day, fully-functional trial. Requires Mac OS 8.5 or later.

PiXELS:3D 3.2.3
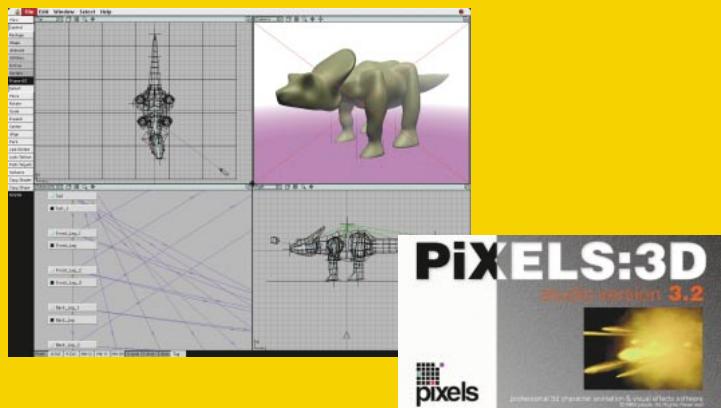
PiXELS:3D is an integrated suite of professional tools for creating and animating 3D characters and visual effects. PiXELS:3D gives you full control of every step in the production process. Build and edit organic models in real-time, create and apply textures/materials, and position objects and lights within a scene. Create realistic movements for all objects and produce broadcast-quality renderings of your animations.

PiXELS:3D Studio 3.2.3 is a demo on start-up but brings up a registration dialogue box with your machine ID. Log on to www.pixels3d.co.uk/free/index.html, fill out the registration (including your machine ID) and a serial number will be sent to you by email for a 30-day fully-functional trial.

Serious Software
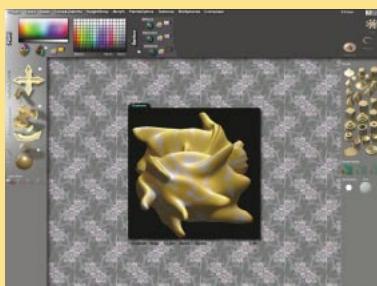
Amorphium 1.0

Using Amorphium is very similar to sculpting with clay in the real world. You push and pull on your virtual clay to mould and shape your 3D object. You can use a set of simple tools to manipulate your virtual clay into a 3D masterpiece, even if you have never used a complex 3D system in your work before. Amorphium allows you to bend, twist, gouge, poke, scale, fatten, flatten, morph, smooth and even paint directly on your 3D creations.

This demo version is save- and load-disabled. However, all other functions operate exactly the same as a fully purchased edition.
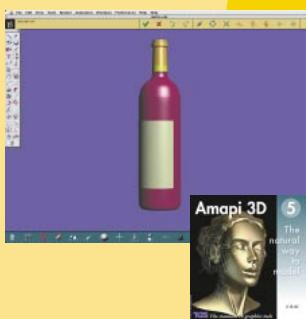
Amapi 3D 5.01

Amapi, in its fifth revision, has several innovations. Dynamic Geometry now 'remembers' the construction history of complex surfaces, allowing you to edit an object dynamically. It also offers four new methods for smoothing surfaces, a new filleting tool, three new deformation tools that taper, bend or twist objects, and Decimation which dynamically reduces the density of complex meshes while preserving key data points and polygons.

Fill in the form on www.tgs.com to obtain a password for a 30-day trial.

Funnel Web Lite 3.6

Funnel Web enables you to analyse your Web site quickly with a click of a button. Featuring state-of-the-art analysis techniques and superior GUI and charting capabilities, Funnel Web allows you to measure every aspect of your online business. Determine how well your Web site is working, the origin and number of visitors, where they are going and how they found you in the first place.

Compared with Funnel Web Standard, the Lite version is limited to processing the first 50,000 hits on your Web site log file. It also has no pre- or post-process events for downloading and compressing log files from your server and no customization of report headers/footers. This version requires Mac OS 8.5 or later.

Don't miss…

■ **Cool Extras!** **DarkSide of the Mac 5.0.6 & WallBall Screen Saver**
Latest version of the classic screensaver plus an off-the-wall newbie!

World of Copland 5
Superb set of new icons from iconfactory

■ **Mac ISPs** Internet access offers from Abel Internet, AppleOnline & FreeUK.

■ **plus…** Many thanks to IconFactory (www.iconfactory.com) for the icons used on our CD

Also on the CD

APPLE *(in the System Utilities folder):*
AppleShare Client 3.8.6
ASIP 6.3 Update
ASIP First Aid 6.3
OpenGL 1.1.2
USB Card Support 1.3.5

COMMS & INTERNET
15 applications including:
AutoShare 4.1
MacTuner 2.1.2
PPPremier Timer 2.0.3

EDUCATION
Three programs including:
Cutout 2.5
WordsCrosser

FONTS
FontBuddy 1.3.1
SmallerFontSmoothing 1.0.1
VisualFont 2.5

GRAPHICS
Ten items including:
Etchelon Tracer 3.5.1
Meshwork 1.4.1
OneApp Slide Show 5.0.2
Rainbow Painter 1.5.0
Screen Gear 3.2.3
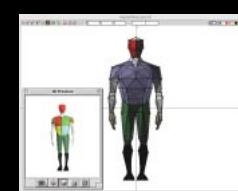
ICON UTILITIES
Kineticon 1.6.4

INFO
1984 on-line 2-7
Book of Changes 3.1.2
EZ Bible 1.2
plus five items for developers

MATHS & SCIENCE
Three utilities including:
AppleTree 1.3.4
MultiSpec 2.9

SOUND & MUSIC
Ten applications including:
ChordBook 2.1
FreeMIDI 1.43
Musicianship Basics 2.7.1
Serial Composer 2.2.1
Sound Studio 1.1.1

UTILITIES
Nine categories comprising 50 useful tools for your Mac including:
CD/DVD Library 3.5
Default Folder 3.0.4
EjectDisk 3.1.2
Excalibur 3.0.1
Excourse stEPS 1.2.2
FileMunger 1.2
Greg's Browser 2.6
Le Franglophile 2.01
Play it Cool 3.35
PrintToPDF 1.0.3
SecretFolder 1.4

UPDATERS
This month's dedicated updaters folder includes over 100MB of patches to bring many popular applications bang up-to-date, including:
Adobe Acrobat 4.0 Plug-Ins
ATI Universal Installer 4.2
HP 600 & 800 Series updater
IomegaWare 2.1
Norton AntiVirus 5 & 6 (12/99)
Norton Utilities 5.0.2
Office 98 Update for Mac OS 9
SoundJam MP 1.5
Vicom Internet Gateway 6.5.2
Vicom SoftRouter Plus 6.5.2
Vicom WebCache 1.1.1
Virex (12/99)

Other demos *include:*

ACTION Space Doctor 1.0.4

Funnel Web Pro 3.5

Imaja Reminder 1.4

MacWasher 1.0

OmikronBasic 6.51e

PPF 1.5

Shareware

Many programs on this CD are shareware, which means that if you keep them and use them for more than the allowed time (usually up to 30 days) then you must pay for them. Treat shareware as budget-priced commercial programs – support shareware authors so that they continue to provide high-quality programs for the Mac.

Descent 3, Rainbox Six & Starbound II
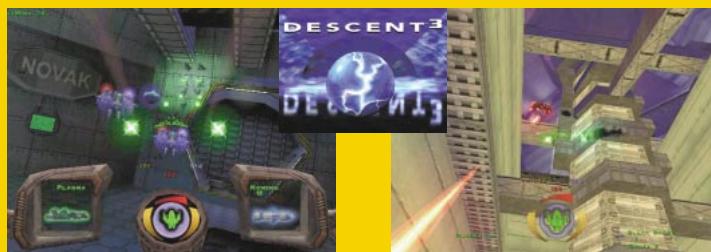
Descent 3 – the latest instalment in the fantastic Descent series. Experience the same frenzied, subterranean shooting action as before – plus the thrill of flying out of the mines into the planetary atmosphere. You'll soar above the surface of the planet, engage in combat with enemy air and ground forces, and use ten new, lethal weapons to obliterate the most sophisticated robots to date! This demo requires a video card that supports 3dfx's Glide or OpenGL (Rage Pro or better).

Tom Clancy's **Rainbow 6** is a fast-paced, thrilling action game in the Damage Incorporated mould. Command an elite anti-terrorist strike squad. Make a plan using innovative and detailed controls, then take up your weapons and execute the mission, giving orders in real time and taking out terrorists with well-placed shots. Requires Rage Pro or better plus OpenGL 1.1.2.

In **Starbound II**, six races discover the secret of the leap-drive and begin to explore space. Lead your ships through combat as a tactician or let them control themselves. The demo allows you to play a full game, but many of the advanced features are turned off. Copy main folder to hard disk before playing.

Games World

This month's Top 12 Shareware games will please everyone. There's arcade action with **Cobra Gunship 1.3.3**, **Battle for the Universe 1.1.1**, **Pac the Man** and **Bub and Bob 1.6**, adventures with **Hunter in Darkness** and **Wheel of the Teachings**, plus some excellent board games with the latest versions of **David's Backgammon**, **ChessWorks** and **ExaChess Lite**. And don't miss **Quarters**, a unique puzzler.

You'll also find updaters for **Age of Empires**, **Bugdom**, **FutureCop**, **Nanosaur** and **Unreal Tournament** (now supports Rage Pro/128!).

Cobra Gunship

Quarters

Bub and Bob
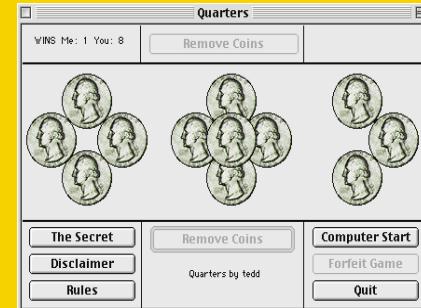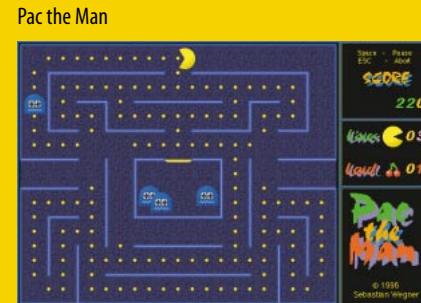
Pac the Man

Macworld CD catalogue

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2000 – over 135,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (1.1.4) is also included – don't forget to register if you find our library useful.

New G4 Power Macs are   now VE-ry fast

Apple's Unified Motherboard Architecture boosts revamped high-end systems

As we went to press last month, Apple announced that it had revamped its entire high-end line-up of G4 Power Macs with faster video cards and a unified motherboard design (January, page 18). The new Sawtooth logic board is now available across the range, including the 350MHz model that previously featured the old blue-&-white Power Mac G3's Yosemite board. *Macworld* tests prove that these new Power Macs are the fastest Macs ever released, although irregularities remain with the G4's hyped Velocity Engine (VE).

The Sawtooth design – already featured in the 400MHz and 450MHz models – includes an AGP graphics card slot, replacing the older PCI-based video of the 350MHz model.

Apple also replaced the entry-level system's CD drive with a DVD drive, and all new-configuration G4s now support digital output for LCDs. The graphics chip now sports a fan, and all G4s ship with Mac OS 9. One other change: Apple doesn't bundle a FireWire cable anymore – you'll have to hunt around in speciality shops.

The new Sawtooth motherboard is similar in design to that of the iBook and new iMac's Unified Motherboard Architecture. Its most interesting feature: two system controllers regulate all the bus and port traffic on the motherboard.

The new Sawtooth G4s are the first Macs to have an AGP 2x port (the AGP adaptor in current iMacs cannot be replaced or upgraded). Although third-party AGP cards are common in the Wintel world, we expect several vendors to offer AGP graphics cards for the Mac in the near future. We did not notice any performance boost due to the AGP port, probably because our tests were mostly 2D-based; in these tests the bus is not stressed.

Only in 3D-based tests does the bus become flooded with data. One benefit of AGP is the ability to store texture maps in the main RAM. If the 16MB of video memory is not enough to hold textures, they can be stored in main RAM.

Memory limits upped

Apple also improved RAM support on the motherboard. Older Yosemite motherboards had a maximum RAM of 1GB, whereas the new Sawtooth boards support 2GB – although the Mac OS can detect only 1.5GB of it. Like the previous motherboard, Sawtooth supports four standard PC-100 DIMM slots. There is also housing and an antenna for an AirPort card, allowing for wireless networking (see Reviews, page 48). The USB interface is also improved; while the Yosemite motherboard put both USB ports on one controller chip, the new models have a separate controller chip for each port so that each gets full bandwidth.

Apple has added an internal FireWire port, in addition to the two external ports in place in the earlier G4 model. The hard-disk controller has been improved from Ultra ATA/33 to Ultra ATA/66 (with throughput upped from 33MB per second to 66MB/s). The improved power manager has a new feature that can even put PCI cards to sleep. This only works, of course, if the card has a sleep mode and supports Apple Power Manager 2.0.

Testing horsepower

Even though our test applications are not G4-optimized (Cinema 4D, FreeHand, Photoshop and MS Word), these systems are clearly faster than their G3 counterparts. The speed gain comes directly from the new motherboard, which has a system bus with a faster data rate, providing a 10 per cent boost in performance.

As mentioned earlier, the 2x boost in the graphics bus bandwidth does not improve the 2D performance. In fact, the AGP graphics cards performed slightly slower than their PCI predecessor.

The performance increase is only properly felt when used with G4-optimized software. In calculation-intensive tasks, for example, there can be a quadruple performance boost over a blue-&-white G3. In our test, most Photoshop filters are just a bit faster than a comparable blue-&-white G3 (see results below). The Velocity Engine – managing the G4's optimized data instructions – clearly has some way to go if it is to live up to its promise. However, compressing our test film (Apple's "1984" ad) using the Sorenson G4 optimized video compressor version 2.1 took 5.34 minutes on the new 350MHz G4 and 4.43 minutes on a 400MHz G4. The baseline blue-&-white 350MHz G3 took 14 minutes.

The 350MHz G4 also enjoys a faster hard-disk interface thanks to its new motherboard – now a 66MB/s Ultra ATA interface. Until now the Ultra ATA interface operated at 33MB/s maximum throughput. The 350MHz model's Western Digital Caviar hard disk showed a maximum transfer rate of 37,000K/s (about 36MB/s) which cannot be realized in the slower ATA/33 interface. On average, the 10GB hard drive had a 15,110K/s read rate and a write rate of 11,316K/s. We tested the read-&-write rate using MacBench 5.

G4s back on track

After enduring the desktop Power Mac supply shortages for the G4's troubled first months, it's a pleasure to finally meet the new high-end Macs. Given that its predecessor was good value at £1,099 (ex. VAT), the new G4/350 – at the same price – is a price-performance bargain. For predominantly CPU-intensive tasks, of course, it is still worthwhile to consider one of the faster G4 models.
– Markus Schelhorn

New motherboard = new power generation

☐ **Best results in test.**

Power Macintosh speeds compared :

	Processor	Disk	Graphics	Overall
Power Macintosh G4/450MHz	193.1	388.9	156.6	221.3
Power Macintosh G4/400MHz	171.9	354.1	135.8	197.5
Power Macintosh G4/350MHz (new)	157.7	308.5	114.1	174.8
Power Macintosh G4/350MHz (old)	147.6	297.9	122.6	170.2
Power Macintosh G3/350MHz	139.7	232.7	144.6	159.8
Power Macintosh G3/233MHz	100.0	100.0	100.0	100.0

Photoshop performance:

	Distortion	Wave	2x resize	Gaussian Blur
Power Macintosh G4/400MHz -VE	3.23	3.11	3.41	4.35
Power Macintosh G4/400MHz +VE	1.99	1.90	1.94	3.36
Power Macintosh G4/350MHz (new)	2.14	1.99	2.19	2.77
Power Macintosh G4/350MHz (old)	2.23	2.06	2.04	3.19
Power Macintosh G3/350MHz	3.65	3.72	4.10	6.36

Behind our tests — **Power Mac speeds compared:** The numbers are the percentage faster that the computer operates compared to the reference system, which is a beige Power Mac G3/233. Longer bars are better.

Photoshop performance: Times are in seconds. Shorter bars are better.

+VE = with Velocity Engine plug-in switched on. **-VE** = with Velocity Engine switched off.

Graphics giant MetaCreations is "significantly restructuring" its business to "focus solely on e-commerce visualization solutions" for the Web, centred on its MetaStream 3D technology. The move has cost 100 jobs, with all the company's graphic whizzes laid off. The CEO has also resigned.

Graphics-software products that do not fit in to the new strategy will be abandoned. Top titles produced by MetaCreations (www.metacreations.com) include the acclaimed Painter 6 natural-media graphics application and the best-selling Kai's Power Tools (KPT) plug-in series. The future of both – vital components in the designer's tool kit – is open at this time, with MetaCreations unavailable to comment as we went to press.

Sources report that MetaCreations has been meeting with the daddy of all graphics software, Adobe Systems. These meetings, originally thought to signal Adobe's outright purchase of MetaCreations, are now seen as potential indicators of Adobe making an offer for several of MetaCreations' award-winning titles. Adobe refused to comment.

Mark Zimmer, previously president of MetaCreations business graphics division, becomes the company's new CEO – following the resignation of Gary Lauer, who remains as chairman. Zimmer was co-founder and CEO of Fractal Design,

MetaCreations dumps designers

KPT, Painter, Bryce & Poser under threat

which merged with Kai Krause's MetaTools in May 1997 to form MetaCreations – following the prior acquisitions of Real Time Geometry and Specular. Zimmer developed the original Painter program.

An early indication of the move Web-wards was the ousting of chief design officer Kai Krause from MetaCreations last summer (see News, *Macworld*, June 1999).

MetaStream is a file format that enables 3D streaming graphics on the Web. MetaCreations says that MetaStream 3.0 will include interactive features, improved compression for 2D and 3D graphics, enhanced security, and features for integrating additional media types.

MetaCreations is not the first graphics software developer to move to the Web. Extensis, Adobe and Macromedia have all launched Web-based services, but none of these companies abandoned their existing product lines to the extent that MetaCreations appears to be doing. That said, Macromedia hasn't updated its vector-drawing program, FreeHand, for over two years, and the company has dropped several graphics tools – such as image-editor xRes – in its current rush to the Internet.

It remains difficult to judge what impact the move is likely to have on designers. The answer depends on who buys the rights to these products, and how well they are supported. Other MetaCreations graphics applications under threat include Poser, Infini-D, Ray Dream Studio, and Bryce. **MW**

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Mac revival helps open golden gates at Expo

The annual US West Coast celebration of all things Mac was another huge success, with a treasure-trove of third-party products from 400 exhibitors on the show floor, and a host of special events. A new direction this year was the music and audio keynote, presented by five-time grammy winner Thomas Dolby Robertson (this time he didn't blind us with science), kicking off a round of conferences and workshops focusing on music on the Mac.

There was a full-day workshop on state-of-the-art Macintosh audio, with RealAudio, QuickTime and MP3; an advanced session on film scoring with Mac technology; and a jazz jam session for conference attendees, given by Jeff Kashiwa and Coastal Access – an all-Mac band.

A more familiar sight at Macworld Expo was the national gaming championship – a noisy and popular attraction sponsored by MacSoft, which itself announced 15 new titles, including the much-anticipated shooter Unreal Tournament. There were also final versions of Civilization: Call to Power, and Rainbow Six (see Reviews, page 56).

LaCie wowed the crowd with its new 6GB and 18GB PocketDrives, sporting FireWire and USB connectivity. Weighing less than a pound, the mini-drives (see left and bottom right) can be moved around from system to system. The company also showed its latest CD-RW and DVD-RAM offerings, including its new FireWire 8x CD-RW , the CDRW8424 (top right). The cross-platform drive works with all kinds of media, and it writes a full 650MB CD in 9 minutes when in 8x CD-R mode. The FireWire drive costs £279, with a SCSI version available for £299.

FileMaker highlighted FileMaker Pro 5 and FileMaker Server 5 as well as new products: FM Pro 5 Unlimited and FM Developer 5. The company was also spreading the word of its partnership with Macromedia and Adobe – working with these companies to ensure painless Web-site creation in Dreamweaver or GoLive with data fuelled by FileMaker databases.

DiamondSoft showcased Font Reserve 2.5, now shipping with Action WYSIWYG from Power On Software, a new application for organizing font menus. It also ships with a new Adobe Illustrator plug-in and an updated version of the Font Reserve XTension for QuarkXPress.

ArtBeats showed off new additions to its digital film library. Revealed for the first time was iFootage – stock footage designed specifically for use with the iMac's iMovie software.

Totally Hip revealed an update to its LiveStage Pro QuickTime authoring environment. The free update has QuickTime VR support that includes the addition of wired sprite-level interactivity to hot spot via Qscript and drag-&-drop behaviours.

Alien Skin Software previewed EyeCandy 4, the new version of its graphics filter package, expected to ship in April. Details on final features were scarce – but Alien Skin said that it would feature compatibility with Macromedia's Web-graphics optimizer, Fireworks.

Asanté's advanced single-chip technology optimizes Asanté's Fast Ethernet adaptors for Mac OS, and its FriendlyShare solution allows Macs and PCs to share a single Net connection.

Macspeech demonstrated its dictation technology, expected to ship during the first half of the year. The company said the software will allow you to talk wherever you can type, and features extensive command and control features.

Imacon showed off its new ColorFlex v.1.9 scanning software, featuring improved shadow depth, automatic auto feature after cropping, new input profiles, ICC preview and CCD calibration.
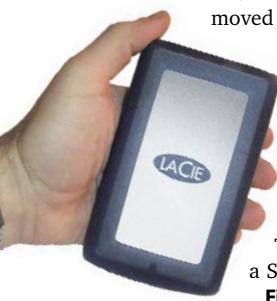
Expo

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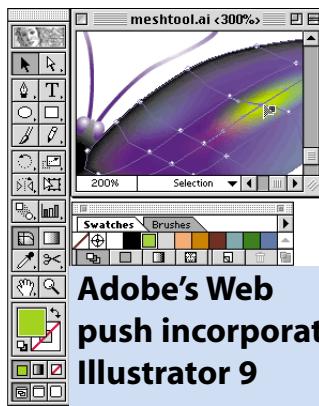
Adobe's Web push incorporates Illustrator 9

If 1999 was the year of DTP and PDF for Adobe (InDesign was last year's massive launch), then 2000 will be focused on the World Wide Web. On top of new versions of WYSIWYG Web-editor GoLive (to v.5.0), Adobe will also update its vector-drawing application, Illustrator, to version 9.0.

After such a big push on InDesign, Adobe is determined to catch up with its rivals on the Internet front. Most anticipated is Adobe's competing product to Macromedia's forthcoming Flash 5. Adobe's Flash rival will produce and deliver high-impact, animated vector graphics for Web sites. Just as Flash integrates neatly with Macromedia's FreeHand (also expecting an upgrade this year), Adobe's new product will likely dovetail with the next Web-friendly version of Illustrator.

InDesign will not stay still. Adobe staff from across the globe gathered at Macworld Expo, San Francisco, for product briefings on the next version of the next-generation desktop-publishing program – as well as InDesign add-ons, InCopy and InProduction (see *Macworld*, December 1999).

Extensis released Suitcase 8.2, which has been upgraded for Mac OS 9 multi-user mode, and will be given to Suitcase 8 users as a free upgrade. The company announced that FontAgent will no longer be bundled with Suitcase 8, and the new release has an updated MenuFonts with a better user interface and more stable code. It also includes Suitcase Server and three connections.

Beatware unveiled e-Picture 2.0. E-Picture, one of last year's show winners, is an application for designing, creating, animating and editing Web graphics with a simple point and click process.

Canto announced Cumulus 5 Workgroup, the second edition of its asset management product line, which helps users find, use and distribute digital files across networks and around the globe. New Workgroup features include customized previews, customized fields, file conversion, HTML output, multimedia slide shows, email links and ODBC support.

Sonnet demoed a 333MHz upgrade for the PowerBook 1400 range, with 1MB backside cache. A special emphasis is on power saving features to get the longest possible battery life out of the upgrade. It is planned for production at the time of Macworld Expo Tokyo in February. **MW**

InDesign in XPress

A lowly apprentice production (alap) had its new XTension ImagePort making its debut at Macworld Expo. ImagePort, which was also shipping just before the show, imports Adobe Photoshop images directly into QuarkXPress pages without the need to flatten the image, and with full implementation for channels and paths. This matches XPress one of rival Adobe InDesign's highlight features (see page 74).

For all the news on Macworld Expo, SF 2000, visit **www.macworld.co.uk/exposf2000**.

Mac 2000: OS X-plored

Forget ViaVoice and Dragon's speech-recognition software. Mac OS X is coming. And it talks. Unsubstantiated rumour proclaims the arrival of an AppleScript compliant voice-recognition system within OS X. The big sell on this is that you can interact with it – not just by giving commands, but by asking your computer to engage in complex tasks, such as filing email. Such rumours are all the rage right now – OS X is coming, but what can we expect?

Mac OS X (pronounced 'Mac OS 10') is the next-generation operating system from Apple, due in the first half of 2000. It has aspects of the traditional Mac OS, mixed with OpenStep technologies obtained by Apple when it purchased Steve Jobs' NeXT. Carbon is the modified version of the Mac OS Application Program Interface (API), it lets applications be rewritten with ease for Mac OS X. Cocoa is a set of cross-platform APIs that allows the development of applications that run under Mac OS X and other operating systems. OS X is integral to Apple's planned multiprocessor G4 workstation, code-named "Mystic" – for more details, see "Multiprocessing Macs back on track", News, *Macworld*, November 1999.

Apple is keeping the details of the new Finder and some of the more unique consumer-orientated tools under wraps until the release is finalized. For approved developers, OS X Developer Preview 2 (OS X DP2) is available and advance reports of its features promise great things. For starters, unlike the previous preview – it's stable. It also boasts a very 'Mac-like' user interface. Apple promises that iMacs will be ideal to run its forthcoming Xcellent OS.

Classic and modern

Other features include protected memory, pre-emptive multitasking, multithreading,and fast networking. It's fully PowerPC native, with no 680x0 code at all.

OS X DP2 has both a Classic.app and MacOS.app – and both let you run Mac OS applications within DP2. MacOS.app provides a full-screen Mac OS environment, unlike Classic.app, which is a "transparent layer" on top of Mac OS X. MacOS.app is a full-screen Mac OS environment separate from Mac OS X, very much like Connectix's Virtual PC. With MacOS.app you can switch between Mac OS and Mac OS X with a menu selection.

The performance of Mac apps under Mac OS emulation is impressive. All the Carbon applications included in Mac OS X DP 2 can be run in the Classic environment.

Although seen at Macworld Expo 2000, the even money is on a major release at the July 2000 expo in New York. **MW**

– Raven Zachary

Final Cut's 30% boost
but DV colour luma-cy persists

Motorola shows off 780MHz G4

Motorola will demo its second-generation PowerPC line in February at the IEEE International Solid-state Circuits conference, in San Francisco. This follows the PowerPC processor road-map (see November 1999).

The chip supports AltiVec (Apple's Velocity Engine), uses copper connectivity and operates at up to 780MHz. It contains a 256K L2 cache, and can handle up to 2MB of L3 cache and two 32K L1 caches. The chip is also revealed to be larger at 105mm squared rather than the current 82mm squared.

Industry pundits suggest that the 780MHz chip shows that Motorola is engaged in a strong attempt to catch up with Intel's x86's clock speed lead. Unlike the current G4, the 780MHz chip also hosts three extra AltiVec vector-processing engines and two extra integer units. There is still development time before the chip enters the production cycle, so aspects of this could change, and the clock speed too could increase.

Apple has announced version 1.2 of Final Cut Pro, its QuickTime 4-based professional video-editing package. It said that while the new version will offer substantial performance improvements to users of Power Mac G4 systems, the upgrade doesn't address a condition that some video professionals point out can compromise image fidelity.

Apple said the upgrade, available as a free download or on CD for "a nominal charge", will feature "significant optimizations to core rendering routines". Apple says the new version will add support for Mac OS 9, cautioning that versions 1.0 and 1.01 are not compatible with Power Mac G4 hardware running the new OS. In addition, v.1.2 will support European PAL video format; earlier versions are limited to NTSC.

Video Velocity
Sources said the performance optimizations focus on support for the G4 processor's Velocity Engine, the set of multimedia extensions formerly known as AltiVec. In beta-testing it transpired that version 1.2 running on a 450MHz Power Mac G4 demonstrated a speed improvement of close to 30 per cent over the previous version when rendering a 39-second video clip containing two dissolves, 11 seconds of colour-balance adjustment and 5 seconds of superimposed text.

A number of features – such as adding video or audio transitions – now appear in menus and sport keyboard equivalents, providing users with more keyboard-based operation than in v.1.0.

A few minor menu changes provide some handy utility functions and make the interface more accessible to keyboard shortcuts, sources said. Default transitions can now be specified, while the program's Duration dialogue lets users change the length of a clip numerically.

Under the programs Sequence menu are separate commands – with keyboard shortcuts – for adding audio or video transitions: "These commands, as well as a few others, are nice improvements, but 1.0 users shouldn't expect huge interface changes," one source said.

Other features include After Effects plug-ins, three-key shuttling, new audio-reverb filters, faster encoding and decoding, and enhanced batch-capture capabilities. Final Cut Pro now imports Macromedia Flash files; the interactive vector format is also supported in QuickTime 4.0, and the enhancement positions Final Cut Pro as an editing tool for creating multimedia interfaces for e-commerce sites such as QuickTime TV's media channels.

Final Cut Pro 1.2 comes with Puffin Designs' Commotion DV, Maxon's Cinema 4D GO and Terran Interactive's Media Cleaner EZ 4 for QuickTime.

Apple acquired the software at the core of Final Cut Pro from Macromedia in May 1998 and released the video-editing package at last April's National Association of Broadcasters show in Las Vegas; the technology behind Final Cut Pro also powers iMovie, the consumer software bundled with Apple's iMac DV models.

Clamp trap
However, sources said, Final Cut 1.2 reportedly doesn't address a "luminance-clamping" issue that some video producers have criticized in version 1.0. While the Mac assumes black to have an RGB value of 0 and white to have a value of 255, the digital video specification uses black and white values of 18 and 235, respectively. In its QuickTime DV codec, Apple scaled these values to 0 and 255, sources said, to ensure easier mixing of video and computer-generated elements.

"Unfortunately, this means that if you perform any operation that causes Final Cut to re-render video frames, you will see a noticeable shift in colour in the resulting frames," another source said. "This shift is only noticeable if your processed clip sits next to an unprocessed clip. Consequently, re-rendering the whole project will hide the problem, though such a time-consuming solution is hardly acceptable.

"I can only hope that Apple will address the luma-clamping issue in its next release." **MW**
– Matthew Rothenberg

Sun shines Mac StarOffice

Microsoft Office under attack from updated Java apps

Sun Microsystems is bringing StarOffice back to the Mac. The Mac will join the growing list of platforms supported by StarOffice, which Sun is grooming as an alternative to the hegemony of Microsofts Office suite.

Lisa Carnochan, application software group marketing manager at Sun, said engineers are working on the Mac version of StarOffice. The number of engineers working on the project has doubled, and will do so again, says Sun. Carnochan declined to specify a delivery date for the Mac version; the previous Mac version, StarOffice 4.0, shipped in 1996.

The office applications come with filters for importing other file formats, such as Microsoft Word and Excel. Linux, OS/2, Solaris and Windows versions of StarOffice are available as free downloads from Sun's Web site. The company is also working on StarPortal, a Web-based version of StarOffice due in public beta by year-end, and slated to ship in the spring via Internet service providers. Carnochan said Mac browsers would be able to run StarPortal, along with cell phones, Palm devices and set-top boxes.

Sun (**www.sun.com**) bought StarOffice in August 1999 for $73.5 million from Star Division, and launched version 5.1 under its own brand. Carnochan claims more than 2 million copies are now in use, including 250,000 copies handed out on CDs at November's Comdex show in Las Vegas.

Sun received 6,000 telephone calls from Mac customers asking about acquiring StarOffice: "They said, 'This is great; we are happy to see an
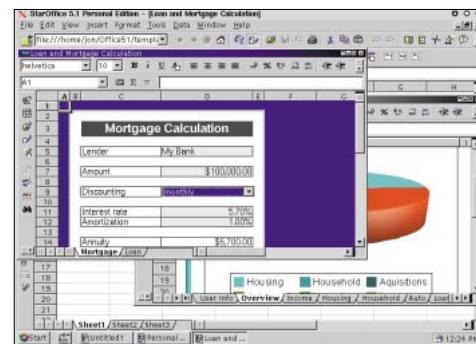
All-round Star
StarOffice includes modules for word processing, spreadsheets, presentations, drawing, graphics, scheduling, database functions, HTML editing, email and news reading.

alternative (to other office applications) – please make it available on the Mac.' " said Carnochan.

StarOffice lets users open Windows file formats in StarOffice, and this feature is being improved. However, StarOffice applications don't do macros because Sun thinks macros are a security risk.

The applications rely on Java. The email client supports IMAP 4 and POP3, and Sun is working to make the client interoperable with as many IMAP formats as possible. She said that the aim of the project was to create a set of office tools that were interoperable and easy to use.   **MW**

– Wendy Mattson

Mac Fusion fizzles out

NetObjects is scrapping the Mac version of its Web-development software, NetObjects Fusion. The company says owners of version 3.0 of NetObjects Fusion for the Mac can migrate to Version 4 for Windows (pictured) for free. Softpress has already announced that v.3.0 users can cross-grade to its Freeway 2 Web editor for just £99.50. Adobe and Macromedia, are also likely to offer cut-price crossgrades to GoLive and Dreamweaver, respectively.

Shane Anderson of SemperMac says the decision reflects an anti-Mac bias at NetObjects: "Eighty per cent of NetObjects executives are former Apple employees whose bitterness about their experiences there is stopping them from taking advantage of the Mac market, which is showing phenomenal growth."

It is highly unlikely that NetObjects will
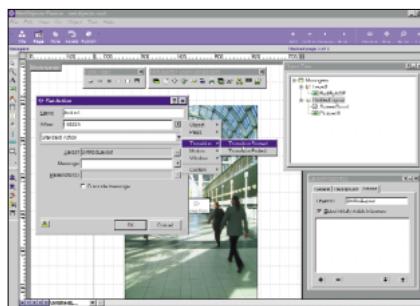
ever work with Macs again. However, Mark Patton, general manager for the company's small-business division, said: "I'm a Mac user at home and at work, and I was sad to see this happen."

He explains that it makes financial sense, citing PC Data's market report which showed the Mac version of Fusion 3.0 with a market share one-fifth to one-sixth the size of the share the PC version of Fusion 4.0 held in its market.

The numbers for 1999 show Fusion 3.0 in 25th place in the Mac Web-authoring market with total sales of $115,000 on 618 units. In contrast, Fusion 4.0 held 20th

place in the PC Web-authoring market with total sales of $1.3 million for 5,000 units.

To some users of the Mac version, the end of Mac Fusion is no heartbreak; but critics say they are tired of waiting for the company to fix the well-documented bugs plaguing the Web-site creation tool. Since release 17 months ago, there has been no update to Fusion 3.0.

Jocelyn Wilson, a graphic designer, has been using Fusion on her Mac for almost three years, but said she is greatly dissatisfied with it.

Version 3.0 continues to suffer from "general instability" and "crashes for no apparent reason", sometimes causing a total system crash, Wilson said. In addition, the table-creation, saving and form-handling features do not work properly, she claimed.

Michael Stearne, president of EnterMix Software, said he is frustrated because NetObjects failed to give Mac people "a straight answer" about its intentions.

The company will support existing customers running NetObjects Fusion 3.0 on Mac OS 7.6.1 to 8.1 and to Power Mac 8600 until December 31, 2000.   **MW**

– Wendy Mattson & Louise Banbury

A history of the digital future

Glenn McDonald and Cameron Crotty take a look ahead, based on new technologies actually in the labs now.

For a quarter century, computing technology has advanced at a dizzying pace. Standing in the new millennium, we've arrived at the era depicted in many sci-fi masterpieces. Much of what was predicted has come true, and even grown mundane. As we look ahead, the hype appears to be denser than the circuits on a PowerPC chip. What say you to molecular computing machines that you can't even see? How about a mouse that measures your moods (but regrettably doesn't change colour to match them)? Not all these conceptualizations will come to pass, but some aren't that far away, either.

Next PC: Exploring the digital frontiers
In the future, predicts Matt Groening's animated show *Futurama*, "people will live twice as long, computers will die twice as fast."

Rumours of the PC's demise may be premature, but they aren't necessarily exaggerated. No one can say for certain whether the PC will survive the coming onslaught of supersmart alternative computing devices – ranging from wireless phones to household appliances. Such products could make the PC less essential, especially if they're simpler to use and don't crash as often.

In the short run, you can expect PCs to become smaller and more powerful, with thinner and lighter screens. And advances in voice recognition could ultimately make museum relics of your mouse and keyboard. But, while the ageing PC may undergo some cosmetic nips and tucks, it probably won't disappear altogether.

Moore power to you Moore's law, based on a 1965 prediction by Intel co-founder Gordon Moore, states that processing power will double every 18 months or so. That's been the case since Moore's declaration, and there's no sign that this torrid pace will let up.

While the PowerPC G3 won't climb any higher than 450MHz, the G4 should reach 1GHz. Next-generation G5 chips are planned to reach over 2GHz by 2001. And, Motorola will move the PowerPC from its current copper-fabrication process to silicon-on-insulator (SOI) technology – boosting speeds by up to 35 per cent.

Current processor technology will eventually hit a brick wall. Researchers agree that existing lithographic techniques for creating silicon chips are limited – you can fit only so many transistors onto a silicon wafer.

Now you see it... Nanotechnology and quantum computing are two areas of research attempting to supplant the silicon chip. Still largely theoretical, these concepts involve using molecular or even subatomic particles as logic components. Instead of relying on circuits to perform calculations, computers would use the position of individual atoms or spinning electrons to crunch numbers, creating extremely powerful "microscopic" computers that would leave today's machines in the subatomic dust.

But what good is a microscopic PC? Robert Morris, director of IBM's Almaden Research Center, says there are certainly practical applications for a miniscule computer – but of course, not one that small. "Rather than making these things so tiny that you inhale [them] by mistake," Morris says, "we're putting effort into wearable computers." Microscopic computing would require very little power – perfect for a tiny, wearable PC such as a computing wristwatch, one idea that the Research Center is pursuing. And, says Morris, quantum computing power would be virtually limitless. It would allow for "massively parallel" computations of the sort foreshadowed by Deep Blue, the supercomputer that beat chess champ Gary Kasparov in 1997.

Will you need this much brainpower to run Microsoft Office 2005? Probably not; but potential applications for number-crunching on this scale could include heavy-duty tasks such as weather forecasting and genetic engineering.

Display's the thing
The near future of display technology can be summarized in three letters: LCD. Flat-panel LCD monitors have several advantages over CRTs: They're lighter, smaller, and capable of higher resolution. Unfortunately, for the next few years at least, LCDs will be prohibitively expensive for many users. Bob O'Donnell, research manager for PC displays with market-research firm IDC, anticipates that 15-inch LCDs won't hit the £500 price point (down from the current £900) until 2003. And they will still cost more than CRTs.

Nevertheless, flat panels are the future, and at least one company is looking to take them to the next level. Russ Wilcox is cofounder and vice president of EInk, a company that aims to produce flexible, paper-thin displays within five years. EInk's Immedia technology consists of liquid ink embedded in paper-thin plastic sheets. Microcapsules contain the ink, along with tiny white particles that respond to electrical impulses. A wireless antenna chip in the "paper" transforms radio waves into text and images.

EInk plans to create an electronic book, with flexible, plastic "pages" that could display downloaded text and erase and reprint themselves. "It would have hundreds of pages you can thumb through, in which all of the text can change," Wilcox says. Attach the book to your Mac, and download whatever you want to read.

IBM's Morris expects displays to evolve in another way. Instead of smaller, 2D displays, he envisions bigger, 3D images. "One obvious extension would be the projection display," he says. "You could project right onto the walls and live in a sea of data [that surrounds you]." Morris predicts 3D displays for games, entertainment, and even medicine (perhaps offering doctors much more comprehensive views of the body through 3D CAT scans and X rays, for example). Initially, such displays would be projected into glass or plastic cubes, but eventually they could stand on their own.

Will drives thrive?
One impediment to generating 3D displays is the tremendous amount of code required to store and project them. Fortunately, as quickly as processors are advancing, storage is moving even faster.

"Right now [hard-drive capacity] is increasing at over 100 per cent per year, and I think that'll keep up for the next handful of years," says IDC's research manager for disk-drive storage, Danielle Levitas. By combining magnetic and new forms of optical-storage technology, hard drives capable of holding 100GB per platter should ship by 2005.

But will we need all this storage if our lives become Internet-based? Morris says that if storage technology outpaces communication technology, it makes sense to keep data retrieval local. But if communication technology moves faster, remote servers will be the way of the future. Rather than storing data on computing devices, we'd grab what we need from online storage depots. Imagine keeping your music collection online and downloading Tony Bennett and Beck whenever you want, using portable players and MP3 files. Already, virtual Web drives like IDrive.com and FreeDrive.com offer up to 25MB of free storage.

Morris also envisions storage in another dimension. "We're very interested in the idea of holographic storage," he says. "Instead of storing magnetic bits on a disk's surface, we're going to the third dimension. By using lasers and their interference patterns, we're able to store information in a crystal and read it at a rapid speed." Holographic storage could produce faster data transfers and more efficient searches by using minute changes in light angles to scan vast amounts of data at once. This is no pipe dream. Holographic storage already exists in research labs, Morris says. Its capacities approach those of today's biggest hard drives, and data-transfer rates reach 1GB per second. But the technology is so expensive that it will be several years before consumers can expect to see any practical holographic storage products on the market.

The touchy-feely PC
Computers are also quickly becoming adept at recognizing faces, tracking gazes, and even sensing moods. IBM's Blue Eyes research program is built around such biometric technologies. "One of the things we're interested in is attentive user interfaces," IBM research director Morris says. "These are interfaces that pay attention to you as you pay attention to them."

One developing technology, gaze tracking, involves a computer camera, mounted to your display, that follows your iris. Depending on where your eye focuses on the monitor, the computer "senses" what info you want and calls it up without requiring you to click a hyperlink.

Peter Lowe, director of worldwide marketing for the Mac OS, tells *Macworld* that Apple is investigating thumbprint readers and retina scanners as alternatives to traditional password security methods.

Part I: hardware

Future PCs: speaking in voices

Voice recognition is often trumpeted as the most natural interface for personal computers, and it continues to be one of the busiest areas of development in the industry.

A Mac version of ViaVoice Millennium Edition 1.0 from IBM is now shipping in the US – a British-English version will be available in the UK this spring. ViaVoice offers a speech interface to perform tasks such as creating email and editing documents by speaking. It creates text from vocal input, and transfers this into applications such as Word or AppleWorks. The software includes a 64,000-word vocabulary and integrates with Apple's text-to-speech utility.

Louis Woo, president and general manager of speech technology powerhouse Lernout & Hauspie, says that hardware and software technologies have reached the point where speech input can be speaker independent – that is, it requires no user training. Building on advances made in both hardware and software noise-cancellation technology, he says, omnidirectional computer microphones that can pick out voice commands from background clatter in a room are emerging. Woo expects voice interface systems to be part of everyday computer use within the next three to five years.
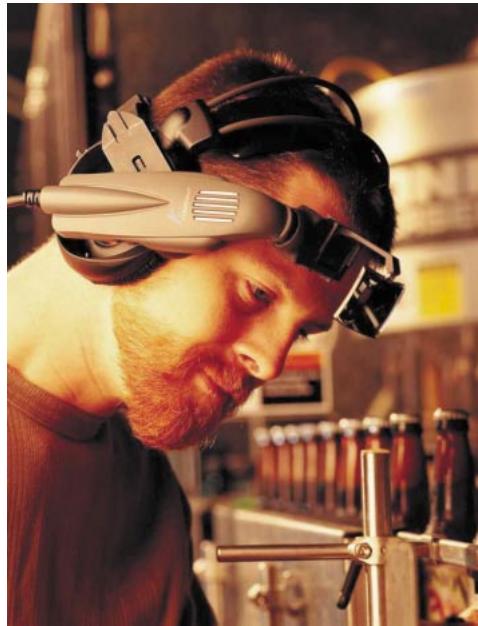
Being Borg
Xybernaut already sells a full-featured wearable computer complete with a Xybercam video camera and a small, head-mounted colour display that flips down in front of the user's eye – ideal for the utility worker hanging perilously from a telephone pole, or designers who've left the Ray-Bans at home. It looks like silly headphones, and costs a cool £3,500.

Apple has led the way in rejecting the beige and the bland. And we can expect Apple's design guru, Londoner Jonathan Ive, to continue his industrial-design revolution at an even hotter pace this year and next.

Future concoctions may overhaul our perception of the PC. Intel, for instance, is touting the Ottoman PC (above), a home PC that packs a system, flip-up LCD, and wireless keyboard into a funky footstool that's "inherently suitable next to any sofa or chair".

Printer maker Lexmark has partnered with the University of Kentucky College of Fine Arts to design a future office work space. Among its stylish components: a see-through monitor, a folding wireless keyboard that you can use with any PC, a printer that sprays paper as well as ink from its cartridges, and a smart desk that senses your arrival and adjusts itself to your height.

For example, an always-on video camera may be used to scan your face every time you sit down to type. If an unauthorized person tries to use your system, your keyboard will lock up. Or recognition systems may further customize your PC experience. "Your display could adjust the font size depending on where you are in the room," Morris says.

Another Blue Eyes project is a mouse that senses your moods. It gauges a user's emotional state by measuring pulse, temperature, and skin responses through the fingertips. Potential applications, developers say, include video games and market research. The mouse could tell game makers when a player is excited or frightened, and let marketers know how questionnaire respondents "feel" about their answers.

Ultraportables: small is beautiful
Today we have an epidemic growth of mobile-computing devices and digital doodads – laptops, pagers, cell phones, personal digital assistants, digital cameras, subnotebooks, and mobile MP3 audio players. At the current rate of development, we could soon be walking around resembling well-equipped cyborgs (see "Being Borg", above).

So how will we keep these cool devices from weighing us down? Wireless systems, advanced display technologies, and all-in-one devices will help keep ultraportables, well, portable.

And no doubt about it, wireless connectivity for notebooks is developing rapidly. Apple's iBook supports a wireless LAN system called AirPort that allows users to share an Internet connection within 150 feet of a hardwired access point.

Besides wireless, another key buzzword for the future of mobile computing is convergence. Qualcomm's PdQ Smartphone is a full-featured digital wireless phone with a Palm III organizer built into the handset.

It can autodial numbers that are stored in the Palm organizer, can display text messages as a pager would, and has all the standard apps of a Palm. Many similar wireless devices are currently in development.

Wireless isn't just for far-flung communications, though. A new industry standard called Bluetooth is designed to let all of your mobile devices swap data via radio waves, provided they're less than 40 feet from one another. You could, for example, take notes at a conference on your Palm device, then wirelessly transfer them to your notebook when you return to your hotel. Look for Bluetooth-ready devices to appear midyear, but read our report (page 31) on Apple's reluctance to join in the fun.

The displays on mobile devices will improve, as well. Bob O'Donnell, research manager for PC displays with IDC, says advances in organic LEDs (displays that use naturally fluorescent compounds) promise brighter, crisper displays for mobile devices in about five years. These screens need less power, O'Donnell says, because unlike traditional LCDs, they don't require a backlight.

Paging Dick Tracy
Look beyond the next five or ten years and you may see some prototypes of the sci-fi stuff currently being pondered in research rooms around the country. Robert Morris, director of IBM's Almaden Research Center, says his group is banking on the PC wristwatch becoming the ultimate wearable computer of the future.

Researchers could use advanced technologies such as quantum computing to produce superpowerful, watch-size machines that require little battery power. Working with voice-command technology, wireless Internet access, and more hypothetical possibilities like holographic projection displays, designers could do away forever with monitors, keyboards, and other computing peripherals. Users would store data on the Web, which they would access through wireless networking and view using holographic projection. A superfast microprocessor would process the information instantaneously before uploading it from the watch back to the Web. Such machines would do everything that the Joneses' PC does now, but updated for the age of the Jetsons.

Read *Macworld*, March 2000, for **Part II: Internet**.

Big Bluetooth ache for Apple

With a pavilion all to itself at Comdex, Bluetooth clearly stood out as the belle of the ball at November's giant computer trade show. But if you're hoping to use the emerging wireless communications technology with your Mac, you could be in for a long wait.

Like its namesake – a Danish king who united the country under a single crown in the Middle Ages – Bluetooth technology hopes to unite your personal communication devices.

Bluetooth uses radio technology to let your laptop, mobile phone, or handheld organizer talk to each other, wire-free, at distances of up to 30 feet. For example, you could use your cell phone to synchronize data on your Palm organizer and Mac. But Bluetooth advocates have even grander dreams, envisioning the technology as the glue that will bind computer peripherals, household appliances, and consumer electronics products.

Molar opposites

Although Apple hasn't ruled out adopting Bluetooth in the future, it is not yet considering the technology for the Mac. Apple has not joined the 1,200 companies in the Bluetooth Special Interest Group, which supports the technology, nor has it provided developers with any indications of its Bluetooth plans. This is in marked contrast to USB and FireWire, which Apple committed to as early as spring 1998. "They made a technological statement of direction [with FireWire and USB]," says KeySpan president Mike Ridenhour. "There's been no clear statement regarding Bluetooth."

Greg Joswiak, Apple's director of portable and communications product marketing, says the company looks at such factors as cost and customer demand when evaluating new technologies. At present, he says, Apple has no plans to even make that evaluation with Bluetooth.

This approach could be a mistake, Bluetooth backers say. "I think they're going to be missing out if they don't embrace the technology because it's going to be so prevalent in people's lives and offices," says Skip Bryan, director of technology market development for mobile-phone maker Ericsson, a founding member of the Bluetooth SIG.

Many high-tech heavyweights, including Motorola, Hewlett-Packard, Lucent, Compaq and, now, Microsoft, have announced support for Bluetooth. The market could be vast. Research firm Cahner's In-Stat Group estimates that Bluetooth-enabled devices will top 200 million units in 2003.

But even the most ardent Bluetooth supporters don't expect products to hit the market until late 2000, with more arriving in 2001.

This gives Apple time to get into the game, if it chooses to. And some Mac developers say they're experimenting with the technology. Bluetooth, Ridenhour says, is "one of those technologies we're investing engineering time in and getting acquainted with."

Bluetooth does not compete with AirPort, Apple's recently introduced wireless technology, which is based on the 802.11 wireless networking standard. Bluetooth's 30-foot range makes it suitable for connecting peripherals and other gadgets in a confined area. AirPort, which offers wireless connections up to 150-feet area, is geared towards local-area networks.   **MW**
– Philip Michaels
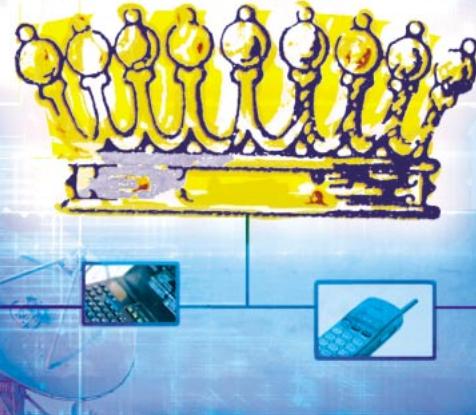
New wireless technology not in line for Mac adoption, just yet

Mixed reaction to BT's latest Net initiative

In a bid to encourage increased Internet usage, British Telecom has announced a new Surftime tariff – a schedule of charges offering unlimited Internet access for a fixed monthly fee. The new service is scheduled to begin in spring 2000, subject to Oftel approval. Bill Cockburn, group managing director of BT UK, claimed that "BT Surftime is the most significant development for the Internet in the UK."

"If SurfTime were launched now, it would be welcomed, but if it is coming out in the spring along with the DSL (Digital Subscriber Line) service. And DSL is still the more attractive option," said James Eibisch, research analyst for IDC.

Industry sources comment that, while this is a major step forward for BT (**www.bt.com**), it remains a puzzle how a company like Callnet0800 can offer ISP services and unmetered telephone calls when telecoms giant BT cannot. The answer is that far from making a deep-pocketed stab at corporate generosity, BT is offering the new tariffs only for calls to ISPs who have agreed a new revenue-sharing deal. This challenges the existing series of agreements under which ISPs take a portion of the amount spent on calls to them made by their clients from the carrier (usually BT).

AOL, a leading light in the campaign for unmetered calls, says that BT's pricing structure is too high – the only truly unmetered option (BT Anytime tariff) costs £34.99 per month. AOL comments: "This is almost double the cost of Internet telephone access in the US, where highly cost-effective and unmetered local telephone calls enable millions of consumers to make the online medium a central part of their daily lives."

Andreas Schmidt, CEO of AOL Europe, voices concern that the tariff might not be made available to other telecoms operators.

The most expensive Surftime option (£34.99/month) offers unlimited Net access. Two £6.99 options offer unlimited weekend or evening access. A daytime option costs £26.99/month for unlimited access during weekdays. Pay as you go costs 1p/minute in the evening, nights and weekends, and 2p/minute during the day. Data calls appear to move to a 2p/minute maximum charge, unlike the current 4p/minute maximum charge for daytime local calls.   **MW**

business news

Apple prunes UK marketing team

Apple has axed key jobs in its UK marketing department, centralizing marketing responsibilities to Apple Europe based in Paris. Several members of staff have lost their jobs, leaving a skeleton crew in charge of the UK operation.

Apple confirmed that four employees from Apple UK's headquarters – in Stockley Park, Middlesex – have been made redundant. This represents half the UK marketing team. Cut out are the head of marketing, Martin Capel-Smith, and senior product marketing manager, Neil Thomas. Further UK redundancies are likely, an Apple insider revealed.

The job cuts affect both Apple's marketing and product-marketing departments. Apple refused to "discuss internal organization changes".

The move towards Europe began some time ago, when some members of Apple UK - including marketing director Alan Hely, and publishing and digital media manager David Cockle – moved to take up posts in Apple Europe.

France is now definitely the centre of Apple's Europe – Apple recently scrapped its UK Mac show in favour of a giant European Apple Expo in Paris. Now that Apple US deals with Apple Europe entirely in the Euro currency, its distance from Sterling-based Apple UK has widened.   **MW**
– Louise Banbury

Read Simon Jary's opinion piece on the UK marketing cull in "Steve Jobs 3, Apple UK 0" on Macworld Online at **www.macworld.co.uk/opinion/**

After peaking at $117, Apple's share price dropped as shareholders made good on their investments. The share price rallied to $100, at press time.

Apple Japan monopoly probe

The head of Apple Japan, has denied that his company tried to fix the price at which retailers sell the iMac and iBook computers. In an interview with the Nihon Keizai Shimbun, Eiko Harada said: "Nobody controlled the prices."

Margin argy bargy
He told the newspaper that the uniformity at which the machines are priced between different shops indicates the small profit margins at which the retailers operate, leaving no room for discounting. Retailers make no more than a few per cent on each machine, he said.

In mid-December, Japan's Fair Trade Commission raided Apple Japan's Tokyo headquarters as part of an investigation into whether the company tried to force retailers to sell the popular iMac and iBook machines at the company's recommended price and no lower. The company claimed its business practices to be "within the law… exemplary".

Analysts estimate Apple's share in the Japanese PC market between 5 and 7 per cent, compared with the company's global PC market share of 4 per cent.   **MW**

Casio in digital double-exposure

Casio has introduced two USB digital cameras into the UK market – the QV-2000UX/lr and the QV8000SX – both priced at £509. The QV800SX is a 1.31-megapixel CCD camera with optical 8x zoom lens. This lens is capable of 32x when its optical and digital zoom combination is used.

Images are captured at 1,280-x-960-pixel resolution, and the bundled 8MB CompactFlash card holds 13 images. The camera also features a wired remote-control unit that helps to eliminate camera shake.

The QV-2000UX/lr is a 2.11-megapixel camera, with a 3x optical zoom lens and support for the IBM Microdrive super-compact hard disk. This is capable of storing 400 images at a resolution of 1,600-x-1,200 pixels.

Both cameras have a Quick Shutter mode, which means the camera is ready for the

Image conscious
The QV8000SX (above) has a bundled 8MB CompactFlash card, while the QV-2000UX/lr (right) supports the IBM Microdrive super-compact hard disk.

next images just one second after the shutter is released. During playback, images are scrolled at an interval of 0.5 seconds. There is also a choice of Night Scene, Portrait and Landscape modes, and a Continuous Recording mode.

Both cameras come with Photo Loader software for downloading and viewing images.
Casio, 0181 450 9131

Mermaid's flash, flat pair

Danish company Mermaid is, for the first time, selling its range of sleek, flat-screen monitors in the UK. The Ventura monitors are available in 15-inch and 17-inch sizes, with a 21.3-inch model expected to ship in early 2000.

The monitors are supplied in either digital or analogue versions. Constructed of polished stainless steel with anti-glare glass and a black glass surround, the monitors have a swing-arm for wall mounting. Optional extras include a USB stereo-sound module, a USB connector, a leather mousepad and a black or grey swivel base. The 15-inch model, which costs £1,021, has a resolution of 1,024-x-768 pixels, while the £1,839 17-inch version offers a resolution of 1,280-x-1,024 pixels. Macintosh users need to buy an £8 adaptor to use the Mermaid monitors.

The display frequency is 65MHz. Two built-in speakers ship as standard with both models.
Mentor Distribution, 01462 814 000

FileMaker Server 5 is Pro plus

FileMaker Server 5 is now available for £799 – with upgrades costing £359. The program can host up to 250 FileMaker Pro database clients (100 previously) and 125 open FileMaker Pro 5 files. The software helps workgroups organize and share data over the Web and through networks.

Files can be stored on a single FileMaker Server machine and security is ensured through authorization keys and passwords.

FileMaker Server 5 offers increased network performance, and automated back-ups – securing data changes while allowing guests to remain connected to the database. It is plug-&-play-compatible with FileMaker Pro 5, and easily integrated with existing FileMaker 5 databases on installation. The software can also support networks hosting multiple platforms.
Computers Unlimited, 0181 358 5858

StuffIt is OS 9-friendly

Aladdin is shipping the Mac OS 9-compatible version of its newly released StuffIt Deluxe range. StuffIt Deluxe 5.5 boasts a speed improvement of around 20 per cent and can make self-extracting archives for Windows. Its Magic Tools have also been enhanced, and new file options include Get More Info, Copy or Move, Make Alias, and Gather. The upgrade introduces a function called Secure Delete, which removes sensitive data. The update is free for registered StuffIt Deluxe 5.x customers. Otherwise, StuffIt Deluxe costs £50
www.Aladdinsys.com

Verity CD-R is write on

Verity Systems has launched an 8x CD-R Duplicator. The stand-alone 6GB VS8800 is designed for duplicating small-to-medium quantities of CDs. The £5,395 VS8800 has eight writers, which can drive a further eight writer "slave-units" and can also operate in conjunction with a Plextor 40 reader.
Verity Systems, 01252 317 000

Ricoh gets mono real

Two new mid-range black-&-white laser printers are now available from Ricoh. The £2,299 Aficio AP2700 runs at 27ppm simplex, or 22ppm duplex, and has a paper capacity of 3,100 sheets. The AP4500 network printer costs £3,999 and prints at 45ppm simplex and 36ppm duplex. Options available include a large capacity tray, stapling and punching finishers. Its paper capacity is 3,550 sheets.
Ricoh 0181 261 4000

Illuminating multimedia

With its 2,300 ANSI lumens and high XGA (1,204-x-768 pixels) resolution 3M's latest multimedia projector, the MP8780, is ideal for large-venue presentations. The projector has a picture-in-picture function, allowing digital and video images to be displayed simultaneously. Its five input channels allow connection of two Macs and three video signals. It also has a VirtualMouse remote-control feature, dual speakers and built-in sound system, and audio outputs.
3M, 01344 858 000

Dreamweaver on Course

Macromedia has announced CourseBuilder for Dreamweaver 3, an application for creating Web-based learning applications. CourseBuilder lets Web developers create training content in a visual environment without needing programming knowledge. Pre-built learning interactions, such as multiple-choice questions, are built using HTML and JavaScript. UK pricing is yet to be announced.

**Computers Unlimited
0181 358 5858**

Debut for mini-projector

Liesegang UK has launched an ultra-portable data/video projector, the dv325. It has 1,000 ANSI lumens and projects XGA (1,024-x-768 pixels) high-definition images. Features include a zoom and automatic rescaling of non-XGA resolutions. The £3,495 projector has two speakers, a combined infra-red remote control and laser pointer, and output sockets for stereo hi-fi.

Liesegang UK, 01924 423 331

Graphics filters updated

Alien Skin has released updates to its graphics filters, Eye Candy and Xenofex. Eye Candy 3.1 and Xenofex 1.1 have now been optimized f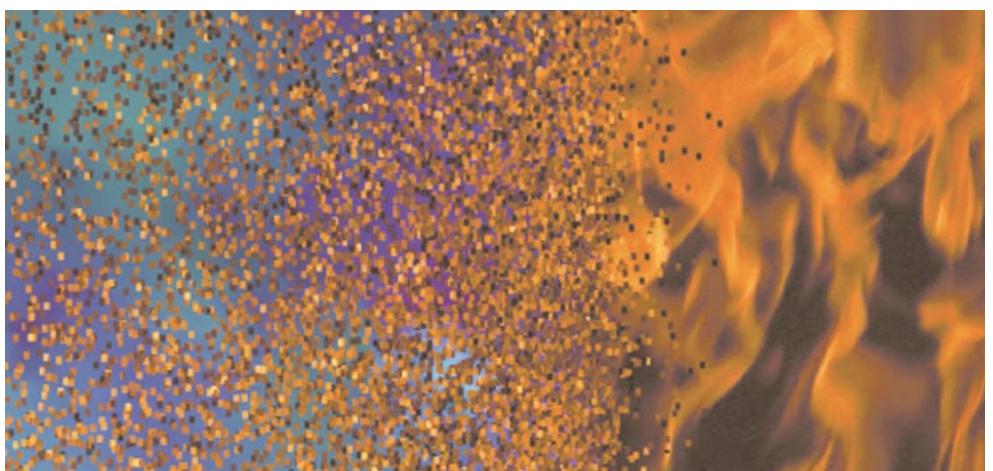or use as Live Effects in Macromedia's latest version of its Web tool, Fireworks 3. The effects now remain editable after being applied in FireWorks 3, and automatically update to match changes made to the original objects. Registered users can download the patches for free.

Alien Skin, http://www.alienskin.com

Top draw business title

ConceptDraw, from Computer Systems Odessa, is a new graphics tool for creating business drawings, such as flowcharts. Objects can be edited with line-colours, fill-colours and fill- and shadow-patterns, including gradients. Hyperlinks can also be used to create Internet-integrated documents. The downloadable version of ConceptDraw costs $125 (about £79).

www.conceptdraw.com.ua

3D job for Boris Factory

Boris beckons
Artel's Boris Factory is a 3D powerhouse that incorporates a number of drastic effects, such as particle spit (above) and particle wipe (below).

Artel Software has added Boris Factory to its family of 3D-effects packages. This is a 3D DVE and effects-transition plug-in package for Adobe Premiere, Canopus Rex/Raptor Edit and Ulead Media Studio Pro.

Boris Factory, priced at £145, delivers 100 pre-set transitions to desktop productions. Transitions include blurring effects, explosive particles and multi-layered distortions. There is a collection of Classic special effects, such as rolling cylinder and smooth zoom with spin, as well as nine Cube effects and ten Dissolves.

There are 11 Page Turn effects, and 11 Ripple and Wave effects to choose from. Particle Effects – such as explosion, slide-out, particle spit and particle wipe – are also included (see above).

The Boris Factory Slides animate video to move in any number of directions: corner pivot slide, four-perspective slide and tilt fall are a few of the effects on offer.

Boris Factory has a user-friendly browser interface for viewing each animated effect before applying it. Effects can be previewed in real-time at full resolution.

Polar Graphics 0208 868 2479

Umax aims Astras at SoHo

Umax has extended its Astra scanners series, with the 2100U and the 2200SU. The scanners – aimed at SoHo users – have an optical resolution of 600-x-1,200dpi and come bundled with Adobe PhotoDeluxe, NewSoft Presto! PageManager for document management, and Caere OmniPage LE for OCR scanning.

The 2100U, priced at £84, has a USB interface for fast scanning, while the £149 2200SU model also has a SCSI-II interface for faster image-transfer. The 2200SU comes with a transparency adaptor for scanning slides and transparencies. The Astra scanner series features 42-bit scanning capability, together with Umax's BIT Enhancement Technology. Both machines have three scan buttons – for scanning images, scanning to a printer, and for sending text to a word processing application, or attaching images to email.

IMC, 01344 871 329

Photo-editing trio put Corel in frame

Corel has boosted its Mac product line-up with two new consumer titles: Custom Photo, and Print House 2000.

The £49 Custom Photo is aimed at novice users. It can be used to apply effects to photos, to add text and clip-art, adjust lighting and focus and remove scratches. It can also be used for making creative-photo projects, such as greeting cards and gift tags.

The software includes two Internet-ready applications: Corel Photo House 5 and Corel Project Designer. Photo House is a bitmap-based image-editing and painting application. Project Designer provides hundreds of template files and an easy-reference notebook guide.

As well as providing hints and tips on effects and paint brushes, it allows quick access to the Corel Custom Photo library. This contains thousands of clip-art images, photos, backdrops, borders and tools.

Print House 2000, priced at £69.99, is a home-publishing and photo-editing application. It consists of Photo House 5 and Print House 5,
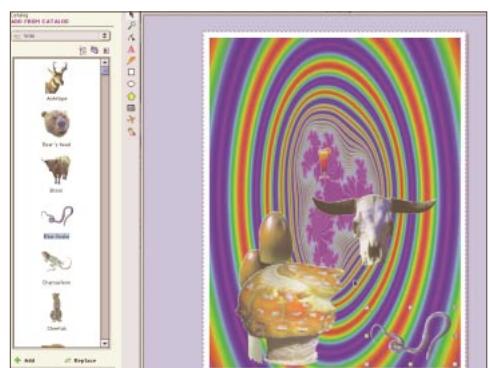
Keep InFocus
Print House 2000 offers 80,000 stock images for photo-editing and home-publishing purposes.

which can be used to create projects using sample project files, or to create designs from scratch. The software comes with 80,000 graphic images and 300 TrueType fonts.

Computers Unlimited, 0181 358 5858
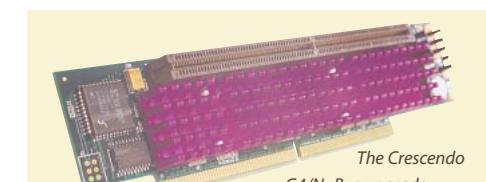
NuBus upgrades

The Crescendo G4/NuBus upgrade.

Sonnet has announced a G4 upgrade card for NuBus Power Macs. The Crescendo G4/NuBus is a 360MHz upgrade, with 1MB backside cache at a 2:1 ratio.

According to Sonnet, the processor will run at 360MHz in 40MHz bus machines, such as the Power Mac 7100/80, and 8100/80, and the Power Computing Power 120. The G4 processor, however, is limited to run at 9x speed, while the Crescendo G4/NuBus will run at 270, 300 and 330MHz in 30, 33.3 and 36.7MHz bus machines respectively.

The upgrade includes: complete Mac OS 9 Velocity Engine compatibility; Adobe Photoshop AltiVec plug-in-enabling software; and Sonnet's Metronome Profiler software. This utility software gives system information such as processor type, speed, temperature, bus speed and cache size.

The Crescendo G4/NuBus is compatible with the Power Mac 6100, 7100 and 8100, the Performa 611X, the WGS 6150, 8150 and 9150, Power Computing 100 and 120, and Radius System 100, 81/110. UK pricing has not yet been confirmed.

Computers Unlimited, 0181 358 5858

Flat-out display

Mitsubishi has launched a 19-inch CRT display, the latest model in its Diamond Plus range. The £345 Diamond Plus 91 flat-screen monitor, with a diagonal viewing range of 18 inches, is designed for corporate and small-office use. It features a tilt-&-swivel stand, detachable power cable and comprehensive on-screen display for controlling brightness, contrast, positioning and geometry.

Mitsubishi's Diamondtron Natural Flat technology compensates for the refraction of light passing through the CRT glass. Mitsubishi says the new monitors reduce the effects of ambient lighting, reducing external reflection, and glare.

The Diamond Plus 91 has an ultra-fine 0.25-0.27mm aperture-grille pitch and a 30-96 KHz horizontal scanning range. The maximum non-interlaced resolution is 1,600-x-1,200 pixels at a refresh rate of 75Hz.

Mitsubishi, 01707 278 684

PowerPrint connected

InfoWave has released PowerPrint 5.0, the new version of its printer connectivity software. It has added support for new multifunction peripherals in the Hewlett-Packard R-series and the Canon MultiPASS series. The release, costing £72.12, also offers Mac OS 9 support, new drivers for Canon BJC 1000, 2000 and 80 owners, and serial-to-parallel support for the HP Deskjet 800 series. PowerPrint allows Mac owners to connect to most PC printers. Version 5.0 also gives control of the scanning and faxing functions of multifunction peripherals.

Computer 2000, 01256 463 344

Training CDs released

Eurosync Tutorials is a new line of interactive training CDs from Ireland-based company, Eurosync Technologies. Designed for companies involved in design, pre-press, printing or art direction, the CDs teach the most popular design and electronic printing applications. Titles include Adobe Acrobat and PDF Workflow, Implementing Colour Management, and Scanning and Colour Correction in Adobe Photoshop. Each course costs £157.50.

**Eurosync Technologies,
+353 1 846 1288**

Mac networks boost

Optology, a UK supplier of CD-ROM Networking and Network Attach Storage solutions, has launched the Quantum SnapServer. This provides 50GB of online storage for small-to-medium-sized Macintosh networks found in many higher and further educational institutions.

Optology 01424 445 100

TypeRighter updated

The Lightning Foundry has released a new version of the TypeRighter Suite, a contextual menu plug-in. It uses Mac OS 8.x and Internet Config to make it easier for users to open files downloaded from the Internet, or any cross-platform network. Version 1.2 can set a file, or a group of files, to have the same creator and type information as a separately chosen file. TypeRighter Suite costs £10.

**The Lightning Foundry,
07974 381 572**

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All prices ex. VAT Macworld FEBRUARY 2000 39

product news

It's a numbers game

Sherston Software has a brace of releases for teachers and kids. Maths Keywords: Numbers and Calculations is a lavishly illustrated numbers learning title that is aimed at the 7-11-year age group. It costs £29.95. The Number Train (above) is written for four to six year-olds. It costs £42.95.
Sherston, 01666 843 200

Ambrosia sweet release

Ambrosia CD 4 is a new release that contains the latest versions of all Ambrosia products, including those recently updated for Mac OS 9. It contains Avara, Barrack, Cythera and Ares. The CD is available online for $10. Also on the CD is a variety of Escape Velocity plug-ins, and Maelstrom sounds and sprites.
Ambrosia, http://www.ambrosiasw.com

Direct connection

The *Internet Directory for Dummies*, by Brad Hill, is designed to help you navigate your way around the Internet. The revised directory leads you to the best that the Web has to offer. It costs £23.99. See Reader Offers on page 97.
Transworld Publishers, 0181 579 2652
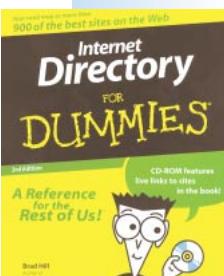
Having a world view

Where in the World is Carmen Sandiego? and Reader Rabbit Playtime for Baby, are both £19.99 releases from The Learning Company. The former helps develop children's geographical and cultural knowledge and the latter is to help tots aged 9-24 learn colours and shapes
The Learning Company, 01664 481 563
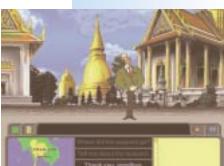
Stylus hits groove with SoHo model

Epson's new Stylus Color 1160 is a printer for the SoHo market and design houses. The ultra-quiet machine can handle A3+ output, at up to 9ppm in mono, and 8ppm in colour. The 1160 offers parallel, serial and USB interfaces and combines Epson's 1,440dpi Micro Piezo printhead with a four-colour dual-cartridge ink system. The latest Epson print driver is also included.

In conjunction with Photo Enhance 4, users can optimize colour output automatically, and enhance the quality of printed Web graphics.

Bundled with the printer is Adobe PhotoDeluxe Business Edition – easy-to-use software for customizing images for for sales and marketing use. It costs £359.
Epson, 0800 220 546
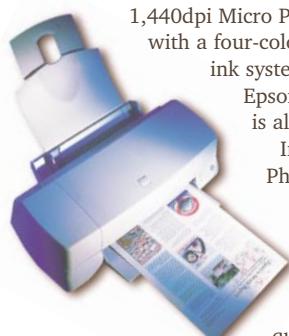
PhotoDisc has added four new discs to its Designer Tools series, including Roads and Highways (above). The CDs are £199 each, and feature 100 images per disc. Images can be purchased from the PhotoDisc Web site, www.Photodisc.com/uk, from £12.
PhotoDisc, 0845 302 1212

Projector project

Sharp UK has released the NoteVision 6 XG-NV6XE portable conference projector. It's a data/video projector, capable of 2,200 lumens and costs £38,000. It accepts all video- and data-input formats and boasts optional wide- and tele-zoom lenses. The projector casts a high-quality image, even in bright light.

Also built-in is a Digital Keystone Correction system, this eliminates image degradation when projecting over short distances. The equipment is powered by three 1.3-inch LCD panels and a 150W UHP lamp. The NoteVision 6 weighs in at 7.2 KGs and measures 260-x-130-x-355mm. It comes with PresenterPAK, a software system.
Sharp Electronics UK, 0800 262 958

Lexar card sharp

Lexar Media has announced its new multi-format card reader, Lexmar Media. The reader accepts common storage-card formats, including CompactFlash and SmartMedia.

The reader works with MP3 players and Palmtops, and accesses pictures up to 40 times faster than downloading from a camera's serial port. The USB version is £69.99. The device needs 16MB RAM, a 5MB hard disc, CD-ROM.
Impact Peripherals, 01483 797 200
Inro Photo, 01628 674 411

Reading room
Lexmar's multi-format card reader works with MP3 players.

David Fanning

2000 will see the launch of new OSs from
Microsoft and Apple – and it could get nasty

Crash of the titans

It's 2000, and two mighty forces are preparing to lock horns to win the battle for the hearts and minds of the computing public. It could be a fight to the death. Armageddon? No – Bill Gates and Steve Jobs, although there's bound to be a bit of Armageddon-like rough and tumble. The battle ground, by the way, is your desktop.

The launch of Windows 2000 is due on February 17, 2000. Mac OS X Client, meanwhile, is due in the same quarter. I've got a funny feeling that Mr Jobs will attempt to pull the rug from under Bill – by making OS X Client available before Windows 2000.

Cast your mind back to the summer of '95 and the hype over Windows 95. Radio 4 announced it as if it was a new addition to the Royal Family. Bill Gates even spent half the year flying from country to country blowing the Microsoft trumpet. The thought that Microsoft had pulled the wool over so many people's eyes made me feel distinctly queasy. I knew the Mac was the better machine, but popular opinion was ranged fairly and squarely against it, at a time when the computing population was growing rapidly. Looking to Apple to lauch a counter attack, I was saddened to see the company floundering aimlessly.

A new OS – known at the time as Copland – was supposed to be, in terms of features, the big leap ahead of Microsoft. Unfortunately, bad management and flawed development meant it was never to see the light of day – at least in its original form. It was a depressing time for the Mac faithful. In fact, it was around this time that I thought it might be wise to go cross-platform – at the very least.

I didn't make the change, and have only come into contact with Windows once in my entire career. I was commissioned to set up a network of about 30 PCs running Windows 95. I did it, and it gave me a view of what it was like on the other side of the fence: fiddly, but not completely unfriendly. I realized the differences between Macs and PCs was diminishing, and Windows 98 closed the gap even further.

1999 saw both companies performing well – although the gloss was removed from Microsoft by its minor monopoly problem. Although 2000 will see both companies update their operating systems, how are they going to convince the public that they need to buy them? Although the Windows 98 launch was a low-key affair – it was essentially a bug fix for 95 – Windows 2000 is going to be much bigger. My nightmare vision is that Bill will throw money at a marketing campaign the size of which we have not seen not seen since the summer of 1995.

Microsoft needs to move the PC masses to a new and bigger operating system. After all, PC manufacturers need to continue the boost in business that came from people rushing out to buy Y2K-friendly machines: they need another Windows upgrade to encourage sales.

People that have been using the Macintosh for a while should be used to heartache and change. These started with System 7, and continued with the moves to PowerPC, and Mac OS 8 and 9. However, these system leaps have never dampened people's enthusiasm for upgrades – at least not for long. The move to Mac OS X is bound to be a tad troublesome – but the rewards will be greater than ever before. One of the initial problems will be hardware. On the upside, Mac OS X has protected memory, meaning that software crashes won't crash the machine.

This means system crashes will indicate hardware problems. The truth is that hardware probably causes more of your Mac crashes than Apple cares to admit. Mac OS X will mean Jobs can no longer hide behind software issues to mask Mac hardware problems. It should be interesting.

So who'll win this hardware Armageddon? Microsoft has its legion of followers, but they are battle-weary – not from fighting Apple, but themselves. And fortunately for Mac lovers, Bill-bashing is currently in-vogue: sticking-up for him is about as popular as being a Bernard Manning fan. Steve Jobs, on the other hand, is the comeback king and can do no wrong (unless you're connected to the doomed UK Apple Expo). Plus, everybody loves an underdog.

In the end, the products will speak for themselves. If either company makes a mistake it will be lynched in the press. Luckily, Gates lynching – rather than Jobs-baiting – is more likely to win column inches.

The bottom line in all this is that, if you need to upgrade your PC and software to use a flawed operating system, you may as well change operating systems entirely. Both OS X Client and Windows 2000 are totally new operating systems, just with familiar names.

However, if Apple screws it up, things will just as easily swing the other way. We'll be there for you. MW
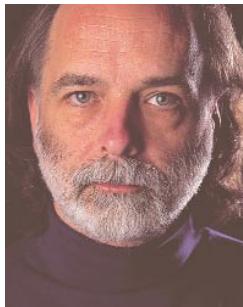
Michael Prochak

Music makers have always loved Macs – and
MP3 is set to strengthen this relationship.

Paying the piper...

When it comes to music, I have to agree with Bill Hicks. The Britney Spears/boy-band-Billies that clutter the current charts really are the spawn of Satan. Not that the music charts actually mean anything these days. Good old Cliff recently proved that carefully orchestrated sales can put almost anything in at Number One …no matter how rancid. And, the beauty of the chart system is, you don't even have to sell that many copies. But while record companies and radio stations continue to churn out video-driven pap, in the creative wasteland – away from the A&R geeks that wouldn't recognize a decent song if it came up and spanked their arses with a banjo – real music is still being produced. And lots of it. Very shortly, all that middle-man-parasite scum – with their posey ego-centric awards ceremonies – will become a global anachronism scraping the bottom-feeding retail slime of what's left of a less-then-lucrative brain-dead pre-teen market. Well... one can only hope.

As a musician, I've always appreciated the Mac. It was born to rock, having built-in sound from day one. It's always had the best music production apps – such as CuBase – and is still the easiest platform for handling sound, integrating with live instruments and even burning your own CDs. The new version of Toast is a joy to use, and it even lets old freaks like me copy ancient vinyl or dub four-track tape masters directly to CD with little or no effort. And everyone knows that the Mac is still the best and most accessible platform for creating Web sites. So, for creative musicians and producers everywhere, the tools are there and the magic is just beginning.

MP3, the technology that allows music to be downloaded directly from the Net, has recently knocked sex off the number one spot as the word or phrase most commonly entered into search engines. And it's MP3 that could help revolutionize the music industry. According to Alan McGee – the man who mistakenly discovered Oasis and set up Creation Records – within five to ten years, there'll be no record companies. To back up that belief, McGee recently quit as head of Creation Records and set up an Internet venture. With increasingly sophisticated and accessible tools – like the stuff we already enjoy on the Mac – it will be a lot sexier for bands to maintain artistic control, create their own albums, upload them to the Net and deliver straight to their customers at a cheaper price. No A&R geeks to please, no record company and no middle-man.

For example, right now, a new band can record in their sitting room with a four-track or Mac, or in a local studio with any of a dozen mix-&-match permutations. Final mix can be mastered to mini-disc, CD, or simply saved as MP3. Instead of slogging to get signed by some record company – that's more concerned about how you look then how you sound – musicians can then create a 'virtual label' via a Web site, put up MP3 files for fans to listen to or download, and then have the option to either receive the whole album online or order a CD directly from the band. At the moment – for under £4,000 – you can buy a duplicator that will copy 100 CDs at a time which also eliminates the need to shell out for large pressings to keep the unit cost down. So, just-in-time production becomes a very easy option.

The beauty of marketing music directly to listeners via the Net is that nobody dictates who your audience is or should be. The consumer has full control over what they want to listen to and how they go about getting the sort of music they want to hear. All musicians have to do is make it easily accessible and target their demographics. OK, Web-based music won't improve taste. But it could democratize the market. After all, the fact that somebody like David Hasslehoff can sell millions of crap albums in Germany does suggest that there's a market out there for almost any kind of music. The Web could be the way of finding it.

Some of the bigger players, like EMI, have seen the writing on the wall, recently announcing that they plan to switch focus from manufacturing CDs to delivering music to customers on the Web. Even Our Price has launched a site selling downloadable music files. But the new beneficiaries of Web-based music – apart from the musicians themselves – will be a new breed of facilitators who can offer recording facilities, mastering facilities and fast servers to host and market these emerging virtual lables. And the real advantage will go to those with both an ear for production and the ability to get their head around the fact that marketing on the Net is not the same as marketing through traditional print or broadcast media. But we'll talk about that later. As it happens, I left the G3 on, and I've got an album to finish.

MW

Mac rumour sites have a dodgy hit-to-miss ratio

Desktop critic

DAVID POGUE is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the *Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies,* fifth edition, updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microsloth Joke Book* (Berkeley, 1997).

I don't believe it

Life sure would be easier if we could see into the Mac future. We'd get rich anticipating Apple stock prices, we'd sell our old equipment at peak resale value, and we'd never buy a Mac that was about to be discontinued. Too bad there isn't some Web site that reveals what's behind Steve Jobs's lead-lined cloak of corporate secrecy.

Welcome to the world of Mac rumour sites. Every week, "sources" provide these sites with "leaks" concerning Apple's secret plans. The entertainment value is high, especially now that, in the Jobs era, you can't pry info out of Apple with a crowbar. But, how accurate are these sites?

Over the last year, I've been tracking these Web pages, with the express intent of checking their hit-to-miss ratio. Apart from discovering that these Webmasters haven't a clue about when to use an apostrophe, I've learned four things: Any source is good enough. One provocative rumour concerns an Apple-branded palmtop. It began last April, when a Web site called MacintoshMagic.com (now out of the rumour biz) published a report by a "disgruntled Apple employee" about Apple's plans. Why would an Apple employee violate his non-disclosure agreement? Because "he's tired of keeping the best-kept secrets in the world." Sure, that's plausible.

Anyway, this fellow described a "Palm OS/Newton hybrid" that was to be manufactured by Palm Computing. The news turned out to be a not-very-clever April Fool's hoax. But, Mac rumour sites are in the business of selling ads. And, ads sell only if the sites have visitors. And visitors come only if the rumours are juicy – and never-ending. As a result, that completely illogical Apple-Palm rumour got repeated all over the Web, where it still circulates today.

Logic still applies. Apple said it was working on a consumer laptop, but wouldn't release a single further detail. Still, O'Grady's PowerPage (**www.ogrady.com**) reported that the iBook would be available in two lines: a consumer model – in blueberry or grape – and an executive model – in mocha or cranberry.

The suggestion that Apple would release a translucent brown laptop should have set off bogosity alarms immediately, but if you had read on, you'd have learned that this laptop was to cost £1,000, weigh 2.9 pounds with two batteries, and run for nine hours on a charge. And talk about compact: the iBook was supposed to be "almost 1 inch narrower… than the PowerBook 2400". Anyone who's ever seen a PowerBook 2400 knows that it's already the size of a walnut – if you planned to include keys at all on a narrower laptop, you'd have to leave out the consonants.

Rumours rise to the top. One of the silliest rumours of the summer was that, because of technical glitches, Apple had decided to cancel the iBook only 30 days before its release. The news made it all the way to MacWeek.com, which wrote that Apple was discussing "whether the product should be delayed or scrapped altogether".

Survey says: Bzzzzt! Less than 30 days later, Apple showed 100 fully working iBooks at Macworld Expo – to great acclaim. Now, would Apple scrap a finished computer line that had been two years in the making? You'd think that *Macworld*'s own sister publication would be smart enough to smell a rat. But, MacWeek.com didn't come up with this story. It was passed along wholesale from MSNBC, who got it from ZDNN, who got it from – O'Grady's PowerPage. In the world of the Internet, consider the source… of the source of the source of the source.

Imminence is bliss. I don't mean to imply that every Mac rumour is utterly bogus. The rumour sites have scored some impressive hits, especially as real announcements have drawn near. The Mac Observer (**www.macobserver.com**), for example, accurately predicted the release of the iBook, new iMac, and G4 models – but only a few weeks before each was actually announced. Mac OS Rumours (**www.macosrumours.com**) predicted the Dragon dictation-software news, but only a week before the public Apple announcement. And AppleInsider (**www.appleinsider.com**) got the Sears distribution deal right – two weeks in advance. MacInTouch (**www.macintouch.com**) rarely plays the advance-notice game, but when it does, it's accurate.

By all means, track the rumour sites – as pure entertainment, they're unmatched. But, don't get your knickers in knots over some Apple decision, or product spec, if your source for such information is a Mac rumour site. The accuracy of those sites is about 20 per cent – at least that's what my sources say. **MW**

reviews
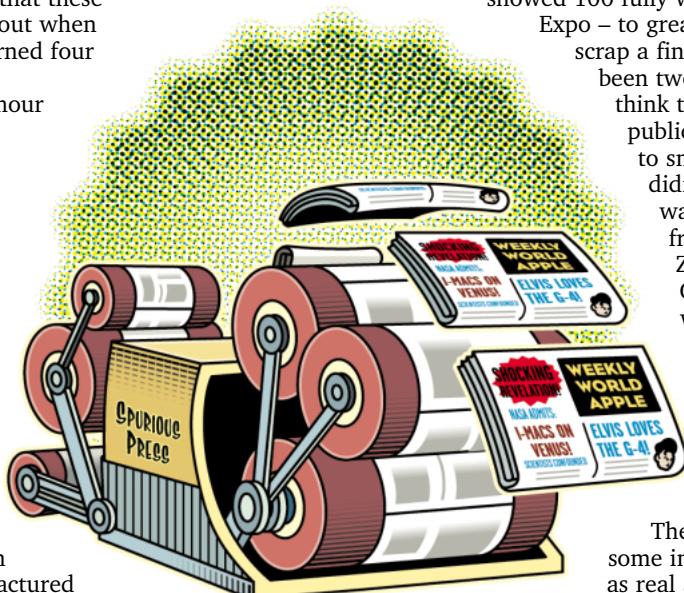
Wireless networking

AirPort Base Station

Manufacturer: Apple Computer (0870 600 6010)
www.apple.com
Pros: Easy to configure; permits multiple Internet connections over single modem.
Cons: Unimpressive performance.
Price: £203
Star Rating: ★★★/6.9

AirPort Card

Manufacturer: Apple Computer (0870 600 6010)
www.apple.com
Pros: Easy to install; permits computer-to-computer networking without Base Station; inexpensive.
Cons: Unimpressive performance; re-establishing broken connections can be difficult.
Price: £67
Star Rating: ★★★★/7.5

After a great deal of fanfare at last July's Macworld Expo, Apple has started shipping the AirPort Base Station and accompanying AirPort card (sold separately), heralding a new era of wireless communication.

With the AirPort, a network of Macs can share a single IP address, and up to ten users can connect to one another – or to the Web – via a single Base Station. You can also wirelessly network AirPort-equipped Macs without relying on a Base Station. However, don't expect to achieve the ethernet-equivalent 11bps throughput that Apple claims. And, we were upset that Apple has not implemented its Base Station

software scheme, which turns any AirPort-equipped Mac into a virtual Base.

We installed AirPort cards in three Mac models – a 450MHz Power Macintosh G4, an iMac DV, and an iBook. Installing the cards was a breeze. The AirPort comes with a special bracket for adding the card to an iMac DV – you simply remove this bracket to install the card into another Mac model. After installing the software, you run the Setup Assistant, letting you join an existing network or configure a Base Station.

Configuring the Base Station is mostly transparent. If you've already created Internet settings on the Mac from which you're configuring the Base Station, the Setup Assistant adds these settings to the AirPort application. If your Mac isn't configured for the Internet, the Internet Setup Assistant is launched.

The easiest way to control your AirPort network is through the AirPort Control Strip module – which lets you monitor the strength of the AirPort's signal, and choose between connecting to the Base Station and connecting to another Mac.

We were mightily impressed with the reliability of the AirPort's connections. After setting up a Base Station inside *Macworld's* lab, we used an AirPort-equipped iBook to log onto the Internet via the Base Station modem. Then we marched around a large office and took an elevator down one floor, continuously monitoring signal strength. Although the iBook stopped receiving data

while we were in the elevator, it resumed once we stepped out to the floor below.

The connection may be steady, but the AirPort doesn't hold up to Apple's claims of ethernet-level performance. In *Macworld's* tests, a large file-transfer between two Macs took two to four times longer with the AirPort, than with 10BaseT ethernet (see "AirPort: ready for take off", below). Performance was even slower when we connected additional Macs to the system. Because of the Base Station's limited bandwidth, when adding clients you can expect an even bigger performance lag than you'd get on an ethernet network.

However, when we played a game of Quake II between two AirPort-equipped Macs, performance was similar to that which you'd see on a LAN connection.

In addition to offering so-so network performance, AirPort sometimes forces you to go through a cumbersome set of software procedures when restoring lost connections.

Macworld's Buying Advice
At £67, the AirPort card is attractively priced, especially considering how easy it is to connect multiple Macs – even without a Base Station. And, if you'd like to maintain a single IP address and ethernet connection for a network of Macs, you'll find the AirPort Base Station useful. If you need the fastest possible network connection, wired ethernet is still your best option. But, if you want convenient wireless connections, an AirPort is likely to be in your future.
Christopher Breen

AirPort: ready for take off

Macworld LAB TEST

▬ **Best results. Shorter bars are better. Results in seconds.**

Air show   **20MB file transfer**

iMac to iBook, computer-to-computer connection via AirPort	74
iMac to iBook via AirPort Base Station	146
iMac to iBook via AirPort Base Station connected to ethernet	97
iMac to iBook via 10BaseT ethernet hub	37

Behind our tests We transferred a 20MB Adobe Photoshop file via the AirPort using an iMac DV Special Edition and an iBook. The systems ran Mac OS 8.6 with a 2MB system disk cache. – Macworld Lab testing supervised by Gil Loyola.

Design up-start

Canvas 7

Manufacturer: Deneba
www.deneba.com
Distributor: Guildsoft (01752 895 100)
Pros: Possibly the only graphics program you will ever need for publishing, Web and graphics.
Cons: Jack of all trades, but that makes it a complex program; a little unstable.
Price: £395
Star Rating: ★★★★/8.7

I n the world of Macintosh graphics, Adobe is king. It has been innovative and creative, producing category-defining products. Granted, Adobe has not been above buying out the competition. The choice for vector-graphics applications was limited to FreeHand or Illustrator – or at least, that's how it looked to the uninitiated.

In fact, Deneba Canvas was already shipping, but struggling to get a foothold in the market. The latest version of Canvas offers a huge range of capabilities, and steps on the toes of Adobe, Macromedia and, even, Quark.

If you are used to easily definable programs, like Illustrator or Photoshop, Canvas is a tad confusing. Like Photoshop, it uses filters and effects to create and edit bitmapped images. Like Illustrator, it also uses vector tools to create various graphics and charts. Text and general page layout is also possible.

Canvas can perform tasks not possible in any other single application. Great attention has been paid to solving any problems that could hold up workflow. For example, if you use a dozen effects on some text, and then notice a typo, you can still edit the text without messing up the effects. Do that in any other application and you'd be looking at hours of extra work. This is handy for Web-site design, allowing for quick changes to menus and buttons quickly.

On the subject of Web design, Canvas makes it easy to create Web sites with rollover buttons, sliced GIFs and optimized file sizes. Photoshop 5.5 can do this, and a number of other dedicated Web-design
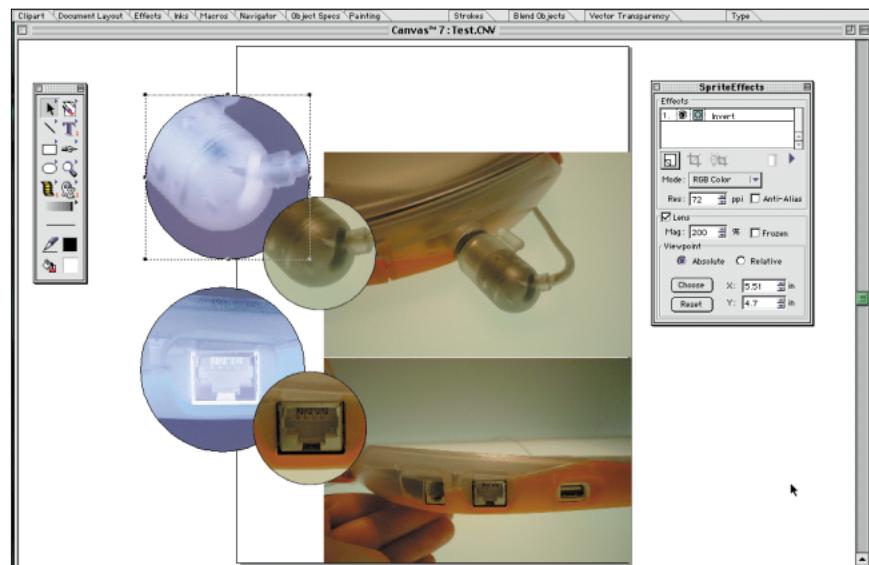
packages, but it is handled simply by Canvas. Animated GIFs are also straightforward to design.

Over 1,000 fonts are included in the standard package. For users who didn't spend years in art school, there are additional tools for making-professional looking documents. For instance, all clip art and fonts are catalogued in a book – there's no need to trawl through CDs.

Canvas has tons of clip art – usually designers don't rely on the often-twee selection of clip-art images. But, a quick flip through the book showed a modern collection of helpful images. Most are colour and Web graphics, including buttons and backgrounds.

The best features of Canvas 7 are its sprite effects. These can be applied to any vector, bitmap or text object. It's not just text that can be edited after applying filters, any object can be changed. You can add effects to an image, and then go back and edit the image itself – preserving its filters or effects.

The magnify effect is great. Create a circle, and then apply a magnification of 200 per cent to it. Put that circle over part of a technical drawing and, presto!, you have an enlarged detail of the drawing. Doing this with any other application would be time consuming – Canvas does it in 30 seconds.

However, Canvas isn't very stable. My

computer isn't rock-steady at the best of times, it has to deal with so much new stuff. However, there were compatibility issues. Every time Canvas and Internet Explorer 4.5 were running together, a horrific crash ensued. On other machines this wasn't the case, but I had to work around the problem by avoiding Explorer.

Macworld's buying advice
There are dozens of ways that Canvas could revolutionize the way you work – mostly improvements in workflow and different approaches to graphics problems.

The problem is that established designers are reluctant to cross-over to a new program. For new users, Canvas may appear too complex – though by investing a little time learning it, a beginner could become a power-user very quickly.

Until there are jobs needing Canvas experts, designers will stay with what they know. No number of features seems to tempt them away from familiar packages. Anybody – professional or otherwise – who needs a graphics application should consider Canvas 7.

Just being a Macintosh user makes you different from the crowd, so why follow the crowd in the Mac world. For the money, you won't get this number of features anywhere else.
David Fanning

Under the microscope
Canvas 7 can complete tasks in seconds, that would take other applications hours, like magnifying small sections of an image.

Upgrade for DTP giant

QuarkXPress 4.1 update

Publisher: Quark (01483 44 55 66)

www.quark.com

Pros: Lots of exciting new functionality; free to registered users.

Cons: None.

Price: Free.

Star Rating: ★★★★/8.9

T he quality of its free in-between upgrades is Quark's only defence against the hordes of aggrieved XPress users. They complain about the aeons that pass between XPress upgrades. Unlike other software developers, Quark's preferred approach is to produce major upgrades just once every three or four years, with a handful of free X.x upgrades in between. The cynical contingent of Quark's user-base is wont to dub these X.x upgrades 'bug fixes'. But, while that might have been true of the 3.3 to 3.3.x series, the 4.0.4 to 4.1 upgrade is focused on new features. Maybe the threat of Adobe's InDesign is making Quark try a little harder.

Worth a bundle

The collection of features in 4.1 is excellent: a bundle of extra-functionality, and XTension-type add-ons that would have been worth paying for. Probably the most high-profile feature is QuarkLink, an automatic Internet link. This allows XPress users to receive information from Quark about technical support, customer service, XTensions and possible conflicts. And, because it also sends Quark information about your copy of XPress – including serial number (users of pirate copies, beware), printer driver, and operating system – it means Quark can customize the information it sends you. It's a great sounding feature – although, so far, all it's accessed for me is an internal error on the Quark server. But ultimately, QuarkLink is a bit of a distraction. When you fire up XPress, you want to design something, not browse the Web. What's wrong with Quark just sending you an email that you can read when you want?

At long last, there's an import-export PDF facility for XPress in the shape of PDF Filter 1.4 – the lack of support for PDF in 4.0 was a huge oversight on Quark's part. This allows PDFs to be imported into picture boxes, and also allows export of files in PostScript format, triggering Adobe Acrobat Distiller. In practice, this last point is really no different from using the Save As File settings in the Mac OS 8 and 9 print
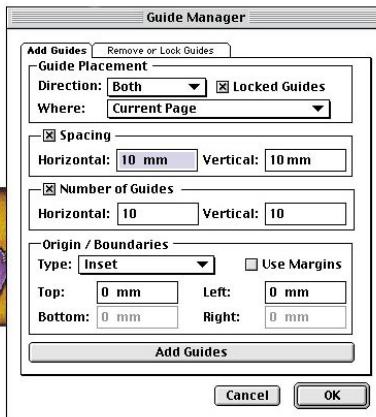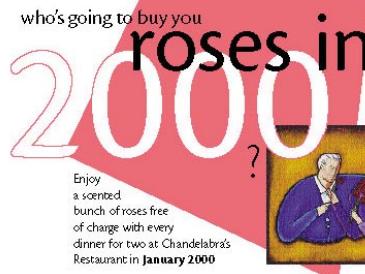
dialogue boxes. But, it's important in a more strategic way: at least now XPress has some in-built PDF capabilities, rather than relying on System-level functionality.

There's also an HTML import-export tool in 4.1. The import is simply a filter HTML that brings in content, plus all the mark-up tags. The export is more useful: it saves the contents of a text box with basic HTML formatting in place, such as alignment, text styles – including superscripts and subscripts – and font changes.

The HTML Text Export Preferences dialogue box allows preferences to be set, dictating the way XPress exports text in HTML. Text in a certain size range can be assigned a corresponding HTML attribute, and checking the Use Fonts box tells XPress to use the same fonts in the HTML text as used in the XPress document.

Accurate guide

There's a new tool, Scissors, which allows cutting of text boxes, picture boxes, lines and text paths; a Microsoft Word 6-8 filter for importing and exporting text in the latest Word version formats; and a Guide Manager, which – at last – allows precision placement of guides from a dialogue box. The dialogue box itself isn't the most intuitive of interfaces – like the guides you drag from the rulers, they don't actually place unless you've got Show Guides already turned. This is confusing when you click the OK or Add Guides buttons and nothing happens. But, it's a good start, and at least it saves zooming up to 400 per cent, or more to place guides accurately. Super Step-&-Repeat extends the function of the Step-&-Repeat dialogue box by offering the ability to scale, rotate and skew – as well as duplicate items.

DéjaVu is a means of quickly accessing recently-opened documents, and customizing default folders for saving documents, text and pictures. This is a handy feature, saving the time of

navigating through endless folders to find your way to and from the graphics, to the text, to the document location. DéjaVu works by appending a list of recently used documents to the File Open command sub-menu, or the File menu itself. It also allows you to customize its settings: up to ten file names can be displayed, in alphabetical order or not, and you can choose whether or not to see the full path name – thereby creating a mammoth menu width.

Custom Bleeds is another new feature. In the Print dialogue box, the Bleed tab now has a Custom addition to the pop-up menu, allowing you to enter separate values for all four edges of a document. The Clip to Bleed Limits box, if checked, prints items only up to the bleed limits; uncheck it to print all items that hang over the bleed limits. And, finally, there's Composite RGB, allowing composite RGB graphics files to be printed on PostScript colour printers.

Macworld's buying advice

As it's free, the 4.1 updater is excellent value for (no) money. Quark is mailing it out on CD to all registered users – if you haven't received your copy, it was featured (as a world exclusive) on the January *Macworld* CD.

Karen Charlesworth

Guiding the way
At last, a way of precision placement of guides in XPress. It's not the most intuitive interface, but at least the facility is there – no more zooming to 800 per cent to get your guides right.
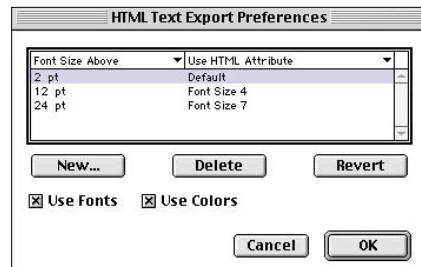
Going online
Use the Export HTML Preferences dialogue box to set HTML attributes for XPress-formatted text.

Collect for Output Plus

Publisher: XPressions

www.xpressions.com.au

Distributor: XChange International (0207 588 5588)

Pros: Easy to use;

builds on an existing XPress feature.

Cons: A little expensive for its limited functionality; a self-extracting archive option would have been nice.

Price: £59

Star Rating: ★★★★/7.4
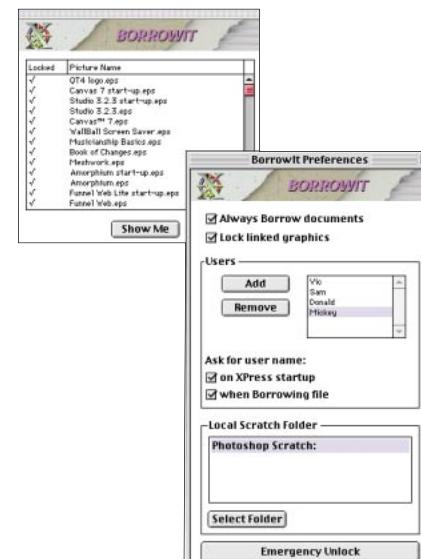
RGB Overflow Alert

Publisher: XPressions

www.xpressions.com.au

Distributor: XChange International (0207 588 5588)

Pros: Easy to use; floating palette updates continuously.

Cons: A bit quirky; text overflow part has a freebie alternative.

Price: £59

Star Rating: ★★★/6.8

BorrowIt

Publisher: XPressions

www.xpressions.com.au

Distributor: XChange International (0207 588 5588)

Pros: Solves a common XPress network problem; makes placed image files read-only.

Cons: None to mention.

Price: £79

Star Rating: ★★★★/8.8

QuarkXPress XTensions that make what you see on-screen appear in print are always worth a second look. Two reviewed here fall into this category, while the third is a must-have for networks. All three are intended for use with QuarkXPress 4.03 or later.

When collecting an XPress document, it's essential that all files are included. Collect for Output Plus expands the capabilities of XPress's in-built function, by allowing you to collect fonts, as well as images, through XPress's standard menu option. It provides an up-to-date alternative for the old Magpie XTension that was so popular with XPress 3.

A default fonts folder can be set to look through the myriad of files on a hard disk, and it searches all mounted drives if any printer fonts are missing. Plus, all images can be collected to a custom folder, and screen fonts grouped into a single suitcase – though the latter may not be advisable if experiences with Magpie are anything to go by. Finally, a StuffIt archive can be created, but, you can't make it self-extracting.

Various image formats cause quirky

Collection box
Collect for Output Plus enhances XPress's standard dialogue, while RGB/Overflow Alert warns of text overflows and RGB images.

problems at repro – JPEG, LZW-compressed TIFF, JPEG-encoded EPS, and the humble RGB file. The worst-case scenario is that these image types will print in greyscale. On the text side, nothing is more infuriating than getting to the bottom of an article's final column and finding the punch line is missing. Text overflow problems are more common than you may think – most daily newspapers suffer from them.

RGB/Overflow Alert handles both of these problems. On opening, closing, saving, printing or collecting a document, a dialogue box warns of RGB images or text overflows. A click on each item moves to the relevant page, and indicated images can be replaced without the XPress Usage dialogue box. The floating alert box can be left on-screen permanently, and, updates its contents as changes are made.

Unfortunately, there are a couple of awkward quirks on the RGB-image side. Any images that are marked as missing in XPress Usage are shown up as RGB, rather than "not found". Mono-images also confuse the issue, with PICT or EPS files showing up as RGB, while the same file saved as a TIFF is fine.

Smart networking

There are two ways of working with XPress files over networks. They can be copied from the server to a user's remote machine, or opened directly from the server itself. The first method can lead to the same file being edited by different people, the second can lead to the uninformative 'File In Use' message. Also, it's very frustrating to find that a placed image has been edited or resized in Photoshop, without the original being kept. Enter BorrowIt. Similar to Ferax Software's CheckItOut XTension for XPress 3, BorrowIt copies a file from a networked server to a local scratch folder of your choice. Any work carried out on

Lending a hand
BorrowIt ensures that only a single user works on a networked file – and it can also lock all used images.

that file takes place on the local copy with the floating palette showing changes as they happen. On completion, the document is returned to the server as a temporary file, checked for integrity and then placed back in its original location, over-writing the previous document. If anyone tries to access a file while it's being borrowed, a dialogue box flashes up, indicating who is using the document, on which machine and for how long. Additionally, all linked graphics can be locked, stopping any embarrasing mishaps. Anyone opening a locked graphic will be warned that it's read-only, and will have to save the edited version under a different name. Disabling BorrowIt is done by holding down the option key when opening a file.

Macworld's buying advice

If all you want to do is to collect images and fonts at the end of a project, Collect for Output Plus is fine. It's easy to use, builds upon an existing XPress function, and requires minimal setting up. At around half the price of a preflighting program, it's a useful, albeit limited, addition.

The RGB/Overflow Alert XTension is a little more tricky. Aside from its quirks, you may need more than a warning of RGB files. Markzware's FlightCheck Collect! picks up problems with file formats – such as RGB, JPEG and duotone – fonts and colours, and then collects all files. It covers both of the first two XTensions, aside from the text overflow – and Quark's freebie TypeTricks 1.01 handles this. It's also £20 less than the other two together.

BorrowIt, on the other hand, is an excellent XTension. Though the version we reviewed was a very late beta, it performed flawlessly. If you're an IT manager, put in your order now – it'll save a lot of headaches when the heat is on.

Vic Lennard

Kodak DC280 Zoom

Manufacturer: Kodak (0870 243 0270)
www.kodak.co.uk
Pros: Comes with a USB cable;
loads of nice extra touches.
Cons: Colour quality could be better;
no New Folder option.
Price: £599
Star Rating: ★★★★/8.5

Nikon Coolpix 800

Manufacturer: Nikon (0800 230 220)
www.nikon.co.uk
Pros: Good quality images; compact;
good bundled software.
Cons: No USB cables supplied; dull design;
limited storage with standard version.
Price: £599
Star Rating: ★★★★/8.6

After a long wait, USB-digital cameras are starting to ship. Wheyhey! No more hours of waiting for huge files to download. Megapixel-digital cameras have finally been unleashed. The difference is massive.

Kodak has released the DC280 Zoom, a stylish-looking two-megapixel USB camera. It comes with a 20MB Compact Flash card that can store between 32 and 245 pictures, depending on picture quality. It also has a 2x-optical zoom, with a further 3x-digital-zoom option. Compared to Serial ownload, USB speeds-up download times onsiderably – but a Compact Flash card reader is still the best option if you're downloading regularly. (See Cameramate 5.1, page 54.)

USB boast
Nikon also brags that its new CoolPix 800 is USB compatible. It isn't. Nikon's USB

Picture perfect
The Nikon Coolpix 800 has great image quality and bundled software

claim is based merely on the fact you can use the Compact Flash card in a USB-card reader. Big deal. The Coolpix also has a two-megapixel resolution and a 2x optical zoom, but the memory card that comes with the standard version is only 8MB – a real drag.

Like the DC280 – and most digital cameras – the Coolpix 800 has an LCD panel for lining-up shots, reviewing pictures and navigating the menu.

Here, the 800 beats the DC280 hands-down. The LCD on the CP 800 is much sharper than the DC280's, even though they're both the same size (1.8 inches). However, although this is a nice touch, it's image quality that's all-important – and both cameras do a pretty good job.

The images from each camera are excellent. The picture on this page of the DC280 was taken using the CP 800 and vice versa. Both cameras produced sharp images with good colour representation. However, the Nikon was the better of the two. Its colours were more vivid, even though its images were less sharp than the DC280's.

The installation software for both is easy to use – and once into the interfaces, it's also easy to find your way around. The Nikon software – with its drag-&-drop option – has the edge, but Kodak's larger preview-picture size makes this difference marginal. Navigating the cameras' menus is also simple. Areas are clearly named and easily accessed, but the Kodak's interface is prettier.

A key area that the Coolpix loses out on is download times. Because it uses a Serial interface, it took 5.3 minutes to download 5.7MB of images. Using USB, the DC280 took just 3.2 minutes to download 6.2MB of images.

Taking effects
Both cameras offer a range of picture effects, but, again, the DC280 is better. The CP 800 offers only two settings – colour and black-&-white – while the DC280 has four – colour, black-&-white, sepia, and document. The later adjusts contrast to make text clearer. Surprisingly this makes a difference, although text wasn't always readable.

One feature the Nikon has that the Kodak lacks, is a Name Folder option. This is great when you need to locate new pictures quickly. All you do is create a new folder, name it, and tell the camera to store the new pictures there. It couldn't be easier. Reviewing pictures is simple with both cameras. But the Kodak does boast a few extra options. These include a Magnifying option, for zooming in on key

Quick as a flash
The Kodak DC280 is stylish, has bags of memory, and can store upto 245 pictures.

areas, and Borders, for framing images. But, why anyone would want to use Borders is beyond me. Bundled software with digital cameras is a real selling point, and both the DC280 and the CP 800 sport an impressive list. The CP 800 comes with Adobe PhotoDeluxe and PageMill, while the DC280 includes Photoshop LE.

None of the software is suitable for professional use, but offers all the capability you are likely to require.

The difference between Photoshop LE and the real version is the ability to do CMYK separations. Also the LE version is 5.0, the full 5.5 version includes ImageReady for Web graphics.

For image-editing, I prefer Photoshop LE, but the HTML option offered by PageMill gives the CP 800 the edge on software.

Macworld's buying advice
Both cameras have good and bad points. The DC280 is better looking, its interface is easier on the eye, and it's USB-enabled. Also, it's bundled with a 20MB Compact Flash card as standard. On the other hand, the CP 800's LCD is sharper, its bundled software is better – as is the download software – and it's lighter.

The CP 800 has no USB cabling, so a USB card reader is needed for fast-image downloads. This isn't such a headache, as a card reader is essential for any regular digital-camera user.

Also, you can buy the CP 800 with a 16MB Compact Flash card, and AC power adaptor – for an extra £70. This clears up some of the storage issues.

The cameras are aimed squarely at the enthusiastic – and wealthy – amateur. At £599, home users aren't likely to rush out and buy them.

Because picture quality is everything with digital cameras, the CP 800 is my winner – just. But, the DC280's overall features are excellent. If this is more important to you, opt for the Kodak.
Woody Phillips

The SAS of shoot-'em-ups

Rainbow 6

Manufacturer: GT Interactive
www.gtinteractive.com
Distributor: Softline (01372 726 333)
Pros: Great graphics; involving plots.
Cons: Unless you can run Open GL and have a ton of disk space, you're out of luck.
Price: £34
Star Rating: ★★★★/8.9

The fantastic move towards peace in Ireland has reduced the threat of terrorist activities in our locality. However, worldwide, there are more terrorist groups than you can shake a Kalashnikov at. If you've ever thought of striking back at Black September, the Baader-Meinhoff gang, or the ALF – but were too bone-idle to join the Navy Seals, the SAS, or become a Special Constable – this is the game for you.

Novel idea
The Rainbow 6 organization – based on a Tom Clancey novel – isn't dedicated to freeing Bungle, Zippy and co, it's more like a modern-day International Rescue. If there is a hostage situation in the Taj Mahal – not the curry house – or a threat to hijack Russian nukes, Rainbow 6 is ready to go

Don't move or Zippy gets it
My bung-e-ling gets me killed – again.

into action. The group is made up of special- service men and women from every corner of the globe, brought together to fight for truth, justice and global stability.

Playing the game is complicated enough to be engaging, but not so that you want to give up. It takes time to master the controls and the strategies for storming embassies – taking control of oil rigs will take even longer.

The game play is impressive. If you don't want to micro-manage the whole operation, there are default plans to follow. Still, managing eight or more commandos is not simple. But, it is not all lead-from-behind stuff, you're usually first into the line of fire. A helpful feature, especially for my early forays, was that when you get shot, you don't have to start again, you just become another member of the force. Well, unless you lead them all into an ambush.

The fact that this is such a great game inevitably means that it has some harsh hardware requirements. Open GL is required, so a blue-&-white G3 or a G4 would be best. However, older machines with third-party cards featuring Open GL support will do. What almost caught me out was the disk space required. Even though it resides on a single CD, the data is compressed. For a full install, I needed almost 1.5GB, and that didn't include the soundtrack. However, if you use an HFS plus-formatted disk you'll need a lot less disk space.

The huge size is due to the 7,000 tiny files it installs. If your minimum file size is 272K – like mine – you're going to need a big chunk of disk space.

Macworld's buying advice
Rainbow 6 is a great game. Many more scenarios are in the pipeline, and network gaming means almost endless gameplay. It is fun and deeply involving, so not one for people who need to eat and work, or have a partner. But, if you can afford to spend your weekends glued to your Mac – and Rainbow 6 will keep you stuck – this is a must have game.
David Fanning

Win
... One of five copies of Rainbow 6 with Macworld Jackpot. Ring 0900 1010 250 before February 29. Calls cost 60 pence per minute.

MacworldJACKPOT

USB-memory-card download

USB Cameramate 5.1

Manufacturer: Microtech
www.microtechint.com
Distributor: New Century Computers (0208 795 1177)
Pros: It speeds up downloads from digital cameras, and ensures future compatibility.
Cons: Only colour co-ordinated with the Grape iMac.
Price: £69
Star Rating: ★★★★/8.7

Digital cameras are advancing at an ever-quickening rate. Some models are producing pictures of almost three megapixels – meaning sizable files need to be downloaded from the camera. The latest cameras offer USB connections fast enough to handle big files. However, cameras without USB usually rely on a serial connection to move the files from the camera to the computer. This can be painful, and frustrates the instant

Speed demon
The Cameramate 5.1 speeds memory card downloads, and gives future proof compatibility.

gratification offered by digital cameras. Also, serial-equipped Macs are becoming scarce.

Time saver
The answer to this problem is a USB card reader – in this case the Cameramate, though there are others. USB card readers are like tiny floppy drives – you simply take your data card out of your camera, and pop it in the card reader. It then appears on the desktop like an extra drive. Downloading 16MB of data takes seconds, rather than minutes – or even hours.

There is one small drawback, though. There are two competing formats of data cards, CompactFlash and SmartMedia

cards. Granted, you're unlikely to be using both, but who can be sure which camera you may buy. It isn't the biggest problem, but, just in case, Microtech has made its card reader compatible with both formats – so you can be confident of lasting compatibility.

Soon there'll be other uses for data cards. MP3 players already use varying types of data cards, and it's likely that CompactFlash will be showing up in these players more often. So, if you have a camera that uses SmartMedia, but think you may have a use for an MP3 player in the future, this is the card reader to choose.

The latest generation of CompactFlash uses the IBM microdrive. This is a tiny hard drive the same size as a regular CompactFlash card. It's capacity is an incredible 340MB, which makes it ideal for MP3 players, and it's compatible with the Cameramate.

Macworld's buying advice
If you want to be sure of fast image downloads and future-proof compatibility, the Cameramate is perfect. It might cost a few quid more than the competition, but it is likely to save you cash in the future.
David Fanning

Small mouse for small hands

Swann USB Mini Mouse

Manufacturer: Swann
www.swann.com.au
Distributor: Computers Unlimited (0181 358 5857)
Pros: Handy for portables users and children.
Cons: Loading software can be a headache.
Price: £19.99
Star Rating: ★★★★/7.4

Some Macintosh users are enormous, with dirty-great hams like shovels. Others can tread water in a test tube, and have tiny little doll's hands. So, why is computer hardware always one-size-fits-all? Actually, it isn't: the Swann USB Mini Mouse is the exception that proves the rule.

The Mini Mouse is pitched at adults "with smaller hands", and at parents with computer-using offspring. It's about three-fifths the size of traditional mice.

Macworld's receptionist Laura has delicate little hands and she loved it. So there we are.

The Mini Mouse is also designed for use with USB-equipped PowerBooks or iBooks, and comes in the full range of iMac colours.

That it isn't designed for average-sized users, like me, was soon obvious: it was like using a Matchbox car to navigate around the desktop.

The real headache with the Mini Mouse is installing the software for its brace of programmable buttons. The box directs you towards Swann's Web site, from where you can download USB Overdrive – generic software for programmable input devices. It's free and it works. However, it kept insisting that I input some non-existent serial number – and flashes a reminder at me on every startup. Extremely irritating.

If you have no Internet access, you have to ask the distributor to supply the software on a CD. Good luck.

Macworld's buying advice
If you're a small-handed person looking to free yourself from the yoke of normal hand-size oppression, then this little fella's for you. If you're in the normal hand-size ruling class – but use a USB-Mac laptop – the Mini Mouse will at least make life on the road more manageable.
Sean Ashcroft

iMac-flavoured hub

Mini USB 4-Port Hub

Manufacturer: Swann
www.swann.com.au
Distributor: Computers Unlimited (0181 358 5857)
Pros: Discrete; gives USB flexibility.
Cons: Instructions totally PC-biased.
Price: £25
Star Rating: ★★★★/7.3

I've got five USB devices on my desk: a keyboard, mouse, Zip drive, scanner, and a card reader. The latter three share one USB port on my blue-&-white Power Mac G3, something that has never bothered me unduly. After all, hot swappability is the great thing about USB – it certainly isn't speed.

I've been using the Swann USB 4-port Hub for a week now. Because I haven't had to lurch around the back of my machine to unplug my scanner and

plug-in my Zip I must have saved all of 45 seconds.

I can't imagine the trivial inconvenience of not having a hub prompting me to part with hard-earned cash to buy one. I think I'd need to be running a USB printer for my irritation to reach unacceptable levels.

The unique thing about this hub is its 500 milli-amp Power Up button, meaning you can run high-powered USB devices – like scanners and printers. The hubs also come in the full range of iMac colours.

Macworld's buying advice
Once you get past the PC-biased – and badly spelt – literature, this hub will do what you want it to: save you time and effort with minimal fuss. And all for £25.
Sean 'bloody luxury!' Ashcroft

Photoshop plug-ins

KPT 6

Publisher: MetaCreations
www.metacreations.com
Distributor: Computers Unlimited
(0181 358 5857)
Pros: Intuitive interface; fun to use;
animation capabilities.
Cons: Limited usefulness; two filters
previously available.
Price: £109.99; "sidegrade" available
from previous KPT versions.
Star Rating: ★★★★/7.4

The latest version of MetaCreations' effects plug-in sets for Photoshop and compatible products retains the KPT monicker, despite Kai Krause having left the building. As usual, KPT 6 continues the tradition of weird and wacky, but with a greater focus on usefulness than the far-out – but disappointing – KPT 5.

Version 6 of the filter set contains ten effects, and, as with any collection of effects, some are better than others. MetaCreations has toned down the "crazy" interface of previous versions, but retained an elegant look-&-feel that continues to favour experimentation over precision.

Here's a quick run-down of them: KPT Projector is a highly interactive skew and rotate tool, with the ability to tile an image to make repeating patterns. KPT Goo – similar to the stand-alone product PowerGoo – allows interactive distortion effects. KPT Gel adds bizarre viscous shapes to your image. KPT Materializer allows you to create dynamic surface textures and bump maps. KPT Lens Flare provides a greater range of lens options than the in-built filter. KPT Equalizer enables the correction of blurred images. KPT Turbulence creates wave distortions and fluid motion on an image. And, KPT Reaction creates organic-zebra-pattern, tile-able textures.

This just leaves two filters that MetaCreations has acquired from RAYflect: RAYflect PhotoTracer has been renamed

Sticky situation
KPT Goo lets you distort, smear and smudge an image with a range of brushes and effects.

KPT Scenebuilder, and essentially turns Photoshop into a 3D rendering tool. The former RAYflect filter Four Seasons is now known as SkyEffects, and is a skyscape-generation tool. These filters have not been integrated with the interface of the other filters at all, and it's no coincidence that they are the hardest to get used to – Scenebuilder, especially. Because it is such a radical departure for a Photoshop plug-in, it will take a lot of experimentation to learn fully.

I criticized Version 5 of KPT for not having animation facilities built into tools I thought were crying out for them. Gladly, with Version 6 in the series, there are animation capabilities on several of the filters – Projector, Turbulence and Goo. This makes the filters 100 per cent more useful – and fun. Creating an animation is incredibly easy – another triumph of the intuitive interface design, and the resultant movie clips are rendered quickly.

Macworld's buying advice
While KPT 6 may be a lot of fun to tinker with, ultimately it will stand or fall on how useful the filters are – something that will only become apparent in time. There's enough here to make it a worthwhile purchase. It's certainly better than KPT 5, although it's not a must-have purchase. Most users will be better off buying individual filters from the MetaCreations Web site as they become available.
Martin Gittins

Illustrator plug-ins

KPT Vector Effects 1.5

Manufacturer: MetaCreations
www.metacreations.com
Distributor: Computers Unlimited
(0181 358 5857)
Pros: Superb 3D Transform effect.
Cons: The other 12 filters.
Price: £129
Star Rating: ★★★/6.5

Vector Effects 1.5 is an update of the popular set of plug-in filters for Adobe Illustrator 7 or later. It contains 13 filters that add a wide range of creative enhancements to Illustrator, creating visual effects from simple shapes quickly, often saving hours.

The Vector Effects interface has a quirky KPT look-&-feel, with a real-time preview of effects, and a number of buttons and sliders. As usual with KPT tools, the emphasis is on tweaking and experimenting, rather than precision.

3D Transform is the most useful, and

complex, of the effects – it enables any 2D shape to be turned into a collection of shapes, creating a 3D effect. It has a wide range of options to control how the 3D transform is applied, such as rotation, extrusion depth, and bevel. There are also a number of pre-set distortions, and you can store the transformations you create. Most of the filters in Vector Effects have pre-set options.

With the 3D Transform filter, there are also five components to determine the light and colour of the 3D form, that complete the illusion of depth. The Light Source option specifies the direction and intensity of lighting, while Highlight and Ambient colour controls determine the 3D-objects colour properties.

The second best filter is Warp Frame, closely followed by Vector Distort, both of which allow the distortion of objects, either by determining the shape of the bounding box, or by applying distortion lenses – such as bulge, spherize, and twirl.

Some of the effects are of little use – such as ShadowLand, which creates repeating shadow patterns, and Neon – which creates gradations of colours extending outwards from paths.

Other filters such as LensFlare, Sketch, Shatterbox, Emboss and ColorTweak, all self-explanatory, are slightly more useful – although again, hardly the sort of thing
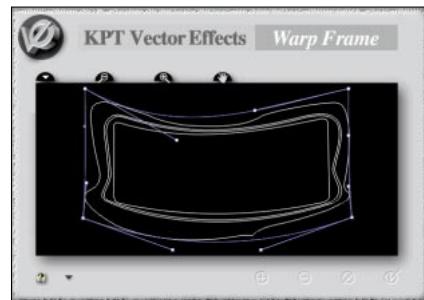
Better by miles
3D Transform is the best filter in the box by a long shot.

you will use every day. The Point Editor is a sophisticated way to add additional control points to a shape, giving a greater degree of control over shapes. Simplify provides the converse effect, reducing the number of anchor points, to enhance printing effects.

Macworld's buying advice
Vector Effects is a rag-tag set of filters – one superb effect, two good utilities, and ten marginal effects that most people will find of little value. Maybe MetaCreations should start selling these filters individually on the Web, as it does with KPT for Photoshop – and let users buy only the effects they need.
Martin Gittins

Extensive meeting scheduler

Meeting Maker 6

Manufacturer: On Technology

www.meetingmaker6.com

Distributor: ESP Software

(01628 623 453)

Pros: Excellent scheduling and meeting notification; good Palm synchronization.

Cons: No client-side time-zone setting; some import problems; dated user interface.

Price: Server, £360; ten-user pack, £690; 50-user pack, £3,275

Star Rating: ★★★★/7.8

Synchronicity
Meeting Maker 6 offers superb scheduling and meeting notification. The Meeting Maker server can handle unlimited users, and has modest system requirements.

With networked offices becoming the norm these days, groupware applications, such as multi-user calendaring, have turned into big business. Unfortunately, market leaders Lotus Notes and Microsoft Exchange have left Mac clients out of their network dance. Now Up-to-Date and Now Contact were a complete Mac solution, but suffered from years of neglect after Qualcomm acquired Now Software (new owner PowerOn Software promises an update by the end of 1999). The only company that has kept the faith is On Technology with Meeting Maker, which runs equally well on the Mac; Windows 95, 98, and NT; and Solaris.

Meeting Maker 6 adds Palm synchronization capabilities, and a Java client that can access your schedules through a Web browser. However, it still suffers from a drab, and dated user interface.

Client-server without tears

Meeting Maker's server component, which handles an unlimited number of users, can run on all the supported platforms, with modest system requirements. Any Power Mac past the 7600 will do, and Windows servers can get by with a 486-based machine. Client requirements are even more minimal. On Technology claims that a Macintosh Plus or better will do the trick; however, we didn't test any 680x0 clients.

Installing the Mac server with Mac and Windows clients was painless, taking less than an hour. However, migrating from Now Up-to-Date to Meeting Maker was considerably more difficult than the manual indicated. Meeting Maker's Calendar Converter utility did not automatically recognize the Now Up-to-Date export file, and importing failed because Meeting Maker can't handle the latter program's open-ended events (those that have a start time, but no end time). We had to delete the misunderstood items manually from the export file.

Once set up, Meeting Maker does an excellent job of proposing meetings, scheduling activities, and arbitrating among people's schedules. Potential attendees can accept or decline meetings via messages sent o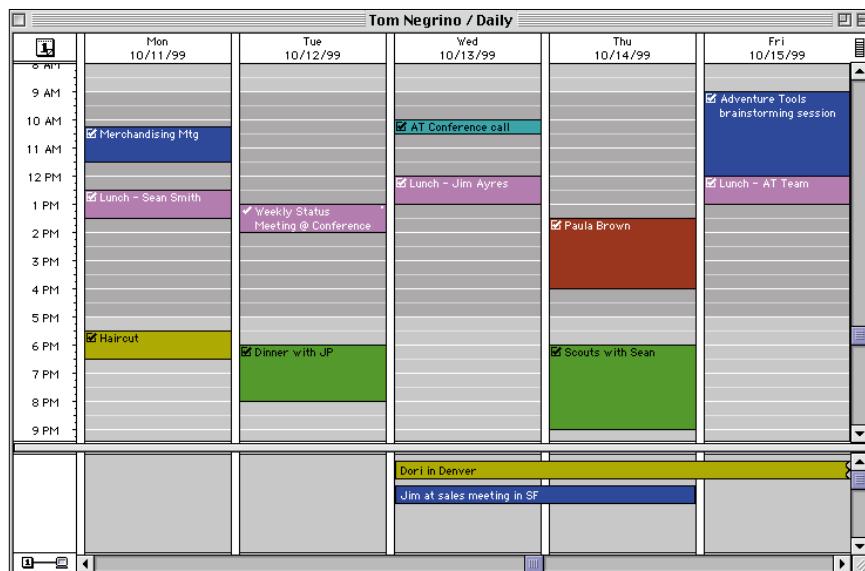ver the LAN, or through Internet email. The program also supports Proxies – users, such as a boss's assistant, who can propose and accept meetings on behalf of others. One minor problem is that the program assumes all clients are in the same time zone as the server. If you're not, you'll have to compensate for time-zone differences when scheduling – the software won't do it for you. However, if you're just using the software here in the UK, this won't be a problem

The new version features the ability to synchronize with Palm handheld organizers. We had no problems synchronizing Meeting Maker data to a variety of Palm devices, but some Meeting Maker event-attributes, such as location, have no equivalent in the Palm software – so, naturally, they don't get synchronized. To use the synchronizing feature, you'll also need Palm Desktop 2.0 or later – a bit awkward, but you'll cope.

Managing large crowds

Updating client software for hundreds of users can be a headache for network administrators, but Meeting Maker 6 makes it easy. After you've upgraded the server, the program installs new client software on client Macs, or PCs, whenever a user connects to the Meeting Maker server. You still have the option of posting client software to a file server for manual installation. This has the added benefit of preventing a flurry of network activity, when users log-on the morning after the server upgrade – stopping the network crashing down around you.

We ran Meeting Maker 6 on three Macintoshes, a PC running Windows 98,

and another PC running Windows 95. To gauge the software's performance in a large corporate setting, we also spoke with network administrators who were using Meeting Maker in configurations ranging from 70 to almost 1,000 users. Meeting Maker's performance pleased them all, even on older hardware. For example, Apple Computer's own installation features a Power Mac 8500/180 serving more than 700 Mac clients, on AppleTalk and TCP/IP – the administrator believes the dedicated server is far from reaching its limits.

Although On Technology has done a good job of adding new features, and improving the software's performance, the company needs to work on Meeting Maker's tired-looking user interface, which has barely changed since we last reviewed this program in 1995. Of the different platforms' client interfaces, the most attractive is the Java client for use in Web browsers. But, this really is an important area, and On Technology should address the problem.

Meeting Maker clients come in packs of 10 and 50, which you can mix and match among platforms as you wish. Clients cost between £69 and £65.50 each, depending on volume.

Macworld's Buying Advice

With a basic installation costing close to £1,050, Meeting Maker is not cheap, but it's one of the few choices left to Mac partisans in the multi-platform, multi-user scheduling category. Scaling smoothly from the branch office to the corporate enterprise, the program also handles mobile computing needs with its Palm synchronization. For companies that want to share schedules among Mac, Windows, and Unix machines, Meeting Maker 6 can't be beat.

Tom Negrino

Speaker haven

ACS 65i

Manufacturer: Altec Lansing
www.alteclansing.com
Distributor: CMS Computers (0151 709 0900)
Pros: iMac-matching design; superb sound quality; good value.
Cons: Only comes in blue; can wake anyone in the building.
Price: £60
Star Rating: ★★★★/8.5

To some, audio isn't the most critical aspect of a computer system. But, for me – and probably many of you – my system pumping out soothing beats and sweet melodies keeps me sane when I'm crunching a particularly crunchy bit of code.

If you like to be bathed in soundwaves while you're working, gaming or browsing, you'll appreciate the importance of quality speakers. And, let's face it, there's a lot of multimedia speakers out there that just don't do your favourite song justice – this could spell disaster for your screen (and fist) when tensions run high.

Altec Lansing, master of audio peripherals, has come to the rescue, though. This speaker trio – two three-inch satellites and a 6.5-inch sub-woofer – is a fantastic buy at under £70. Yes, 6.5 inches of lush, resonant sub-woofer at a bargain price.

The ACS 65i is styled after the iMac, hence the "i". This is most evident in the cute satellites, although the bass-box does have token blue plastic feet on the otherwise beige cube. The satellites look like iMac babies: blue- and clear-plastic, flat-ended bubbles that are "oh so cool" to have on your desk. Unfortunately, these speakers don't come in Apple's full range of Glacier Fruits colours at the moment. So – if you don't have a blue iMac or G3 – unless you want clashing nouveau-Mac chic (and that's just not millennial, darling), you're out of luck.

On the design side, there are a couple of minor failings. While the volume control is handily on the satellites, the bass knob is on the bass-box. This is inconvenient if you have the woofer on the floor as recommended. Both controls also lack calibration marks – a minor quibble, but it would be nice to know just how much bass you were blasting.

But, what do you get apart from mini iMacs? Well, I'm really interested in the bass. With the 20-Watt sub-woofer squatting near your feet, it's non-directional, low-frequency dynamics positively pulse through you. The satellites – with 13 Watts of power and small enough to be perched almost anywhere – deliver crisp audio, even at high volume.

The ACS 65i has a wide frequency range and excellent clarity – music becomes almost touchable. It easily copes with my demanding industrial-noise CDs, and shoot-'em-ups are most traumatic. Don't be surprised if you end up sinking down under your desk into a sea of sound waves – very seductive.

Macworld's buying advice

If you are still stuck with a two-speaker or, even worse, internal audio set-up, one try of Altec Lansing's terrific trio and you'll never look/listen back. The only way to ensure clean sound across the full range of frequencies is to separate bass and treble with a three-piece system. The ACS 65i does this beautifully, stylishly and at a very reasonable price.
Seth Havens

Cheerful-animation tool

Amapi 5

Publisher: TGS
www.tgs.com
Distributor: Computers Unlimited (0208 358 5857)
Pros: Useful new tools; animation module redesigned.
Cons: Awkward user interface; no Mac support for ZAP technology; slow to respond on-screen.
Price: £299; upgrade from previous versions, £129.
Star Rating: ★★★/6.4

Without a doubt, one of Amapi's (pronounced I'm 'appy) main talking points is its non-standard user interface. It's an acquired taste, but beneath the plethora of icons lies an interesting 3D-modelling program.

Now in the hands of TGS, version 5 of Amapi promises much. Top of the new feature list is Dynamic Geometry, where the construction history of a shape is remembered. Like the History facility in Adobe Photoshop 5, you can go back and alter a shape's profile, outline or basic
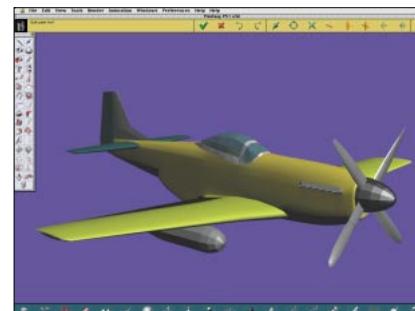
Smooth operator
Beneath an oddball user interface, lies a capable 3D modeller, with some useful new features.

structure. While version 4.1 added rendering features, such as OpenGL support and texture mapping for objects, the new smoothing tool takes this further; uneven surfaces can be smoothed and angular meshes can be improved. Version 5 also has a set of new deformation tools that can taper, bend or twist objects automatically – a welcome addition.

Another new feature, Decimation, examines the complexities of a mesh, algorithmically reducing its density. Objects can be created then their detail, and file size, reduced – useful for games modellers in particular.

The most interesting new feature is an export option: ZAP, a proprietary solution for publishing 3D work on the Internet.

Similar to Macromedia Flash's handling of 2D objects, ZAP is bandwidth-friendly with, apparently, a 5KB ZAP file equating to a 1.5MB VRML equivalent. It works by sending only key data for the re-creation of a 3D model. The ZAP player then reconstructs the full image at the receiving end. Note the word "apparently" – unfortunately, the ZAP player is only available for Windows 95/98 and NT4, and works with Internet Explorer 4 only.

The animation module, a weakness in previous versions, has had a total facelift – the interface is now easier to get into. Other additions include a Cinema4D export option, a 3D-text tool that displays edited text in real-time, and a filleting tool palette.

Macworld's buying advice

Amapi still suffers from a basic failing – the interface is difficult to use, as many icons are too abstract to show their real use. Pop-up name boxes that appear as you pass over each icon would solve this problem. It appears to be a little more robust than before, but can be slow to respond – especially when clicking on dialogue boxes – and there are some problems with on-screen translations ("open" still appears as "ouvrir").

Amapi aficionados will appreciate the new features, but TGS is unlikely to win many new converts.
Vic Lennard

Eye fidelity

Large-screen monitors monitored. **By David Fanning & Seth Havens**

Because many Macintosh users are involved in design, video and DTP, working with clear, colour-accurate screen-images is crucial. Here, we take a look at the current range of large-screen monitors – 20-inches and up – to determine which can be considered professional monitors. For anyone working with colour, screen-size is just one of many considerations when choosing a monitor.

Calibration is one of these – something I found out the hard way.

A while back, I produced a complex collage for a holiday brochure cover. It took ages to get the job right, but the end-result looked fantastic. I transferred the image to a disk and took it into the agency. Full of pride, I opened the image on the client's computer and – to my horror – was greeted with what looked more like one of Goya's Black Paintings than a bright and breezy holiday image.

My fatal mistake was to have cranked up the brightness on my dying monitor. It looked fine on this, but awful on anyone else's. Monitor calibration, then, isn't just for obsessive art directors.

Eye screen

CRT (cathode ray tube) monitors use one of two different technologies: shadow-mask or aperture-grille. Years ago, aperture grille (aka Trinitron) was synonymous with high-contrast images and flatter screens. Shadow-mask screens had softer, more colour-accurate images with better convergence, but rounder screens. These differences still exist, but are not nearly as pronounced.

Aperture-grille screens are always vertically flat because images are projected through vertical wires held at high tension. You will also be able to see an artefact caused by the guide wires that keep the vertical wires in place. On a plain background you will see a faint line across the screen; large screens have two. If the tube is curved both vertically and horizontally, then you're looking at a shadow-mask screen.

Many people believe aperture-grille is always better than shadow mask. Because of its colour-accuracy, shadow masks have tended to be more popular – yet aperture-grille technology is less likely to experience problems such as convergence and pincushion alignment.

Eye Mac

The monitors in this round-up fall into two camps: those with calibration and those without. The quality of all modern, large monitors is good – but without some kind of calibration you can never be sure. Colorific is simple and effective calibration software (see "An eye for colour"). Although it doesn't cost manufacturers more than a few quid to include it, some still don't. Even if you can find a bargain among the un-calibrated models, you'll
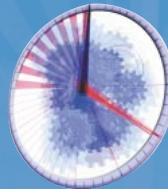
Eizo FlexScan T960

The FlexScan is an ugly duckling. Angular and beige, it's the antithesis of the Studio Display. It is, though, a very capable monitor. Its controls are accessed through a single-button system. One of the best things about it is that the image was impressive straight out of the box. Convergence was also spot-on – something few of the other monitors tested can claim. This bodes well for the lifespan of its tube. USB is built-in, and it has a trapdoor for a forward-facing keyboard socket. But, at £959, it's only £10 cheaper than the Studio Display.

Hitachi CM813ET Plus

This was the most compact screen tested – important for people with limited desk space. The Apple Studio Display 21 is 70mm bigger than the Hitachi in every direction. Colorific software is also included, to make sure you can't go wrong on colours. The image is good and sharp, and the contrast is great. The Plus' price is about right, at £749 excluding VAT. But it's not really a bargain, unless your desk space is really at a premium. At this price, though, you may well be able to afford an LCD flat-panel display.

Samsung SyncMaster 1100p Plus

The SyncMaster is a shadow-mask screen, yet its rendering of blacks and its contrast is impressive. The controls are on a retractable tray and are easy to understand. Focus is also adjustable, which is a rarity. A monitor's focus loses its sharpness with age, so having a control for it should extend the useful life of the monitor. Its case is traditional and functional. Even though it is beige it's curvy enough not to be ugly. Colorific is included – the essential solution for colour worries. And, at just £635, it is among the best-value professional monitors available.

LG Studioworks 221u

The Studioworks was a pleasant surprise. As well as Colorific, it has an unusual feature called a Digital Eye Luminosity Sensor. On the front of the screen, there's a small sensor that measures ambient light. It then adjusts the on-screen image's luminosity to the optimum setting. Although the results weren't obvious – we didn't have time to wait for the sun to set – the theory is that it will keep a constant image. It's a nice touch. It also has a built-in USB hub, and its shadow-mask screen is not too bowed. The £660 price tag is fair, but no head-turner.

always be better off with a calibrated model. This is because, as a monitor ages, its picture deteriorates. Some things – such as focus – you can't fix, and convergence is tricky to keep perfect. Colour, however, can be calibrated accurately, and this adds life to your monitor. A number of calibration-less models that still warrant a mention are the Mitsubishi 2020U, the Sony GDM-

F500 and the ViewSonic G810. These products did well in our tests. The Sony and Mitsubishi monitors have perfectly flat screens, which cuts down on reflection. The Sony boasted great contrast – typical of Sony machines.

The Iiyama Vision Master Pro510 and the Nokia 445 Pro

| COMPANY	MODEL	PRICE (ex VAT)	STAR RATING	SCREEN TYPE	MAX RESOLUTION Pixels	USB	SOFTWARE	UNIT SIZE	DISTRIBUTOR	CONTACT	COMMENT
Apple	Studio Display	£969	★★★★/9.0	Aperture grille	1,600-x-1,200 @85Hz	One In, four Out	ColorSync	569-x-574-x-550	Apple	0870 600 6010	It's big and bulbous, but it has fantastic controls for consistent, top-quality images.
Eizo	FlexScan T960	£959	★★★/6.9	Aperture grille	1,600-x-1,280 @86Hz	One In, four Out	Colorific	494-x-486-x-520	Pro Display	01483 719 500	This is an excellent monitor in most regards, but it does not quite justify its steep price tag, which is only £10 less than the Apple Display.
Hitachi	CM813ET Plus	£749	★★★★/8.0	Shadow mask	1,856-x-1,392 @72Hz	Optional card	Colorific	488-x-482-x-470	Hitachi	01628 643 000	Compactness is the name of the game here. If you have limited desk space, this model will save you more inches than the rest.
LaCie	electron22	£799	★★★★/8.7	Aperture grille	1,800-x-1,440 @80Hz	Two In, two Out	Colorific	500-x-500-x-482	LaCie	020 7872 8000	When the USB Blue Eye calibrator is released in February, it will will facilitate top-quality hardware calibration, making this a top choice for all-round quality.
LG Electronics	Studio Works 2210	£660	★★★★/8.4	Shadow mask	1,600-x-1,200 @90Hz	One In, four Out	Colorific	498-x-510-x-512	LG Electronics	0870 607 5544	A bargain budget-monitor with Colorific software for calibration. It is one of the cheapest models with this feature.
Iiyama	Vision Master A201HT	£689	★★★/6.3	Aperture grille NF	1,600-x-1,200 @102Hz	No	None	493-x-490-x-482	Iiyama (UK)	01438 745 482	Boasts a Natural Flat tube that is both vertically and horizontally flat – cutting down drastically on screen reflection.
Maxdata	Belinea 10 80 60	£599	★★★/6.8	Shadow mask	1,600-x-1,280 @85Hz	No	None	490-x-520-x-512	Maxdata	01344 788 910	Even the very cheapest monitors are quality products – the only drawback is lack of calibration.
Mitsubishi	Diamond Pro 2020	£665	★★★/6.8	Aperture grille NF	1,800-x-1,440 @80Hz	Two In, three Out	None	500-x-500-x-482	Mitsubishi	01707 278 684	Mitsubishi developed the Natural Flat tube, but unfortunately doesn't include Colorific, something that would improve colour fidelity.
Nokia	445 Pro	£599	★★★/6.7	Aperture grille NF	1,800-x-1,440 @80Hz	No	None	500-x-512-x-501	Nokia	A01793 512 809	The Nokia and the Maxdata both share the prize for the lowest-price screens, but the fact that this one is a Natural Flat model gives it the edge.
Samsung	SyncMaster 1100P	£635	★★★★/8.1	Shadow mask	1,800-x-1,440 @85Hz	No	Colorific	504-x-492-x-508	Samsung	0800 521 652	Smooth and curvy, the Samsung is a class act, including the all-important Colorific calibrator.
Sony	GDM-F500	£1,199	★★★/5.2	Aperture grille	1,800-x-1,440 @80Hz	One In, four Out	None	495-x-500-x-478	Sony	0990 424 424	I love the flat screen but, with no calibration, I can't justify paying this kind of cash for this monitor.
Viewsonic	G810	£550	★★★/6.9	Shadow mask	1,600-x-1,200 @75Hz	No	None	505-x-490-x-493	Viewsonic	0800 833 648	The lowest-cost monitor tested, yet it competed well with its pricier counterparts.

La Cie electron22

La Cie narrowly missed receiving a joint Editors' Choice nomination. The only thing working against it is that the hardware calibration-kit, Blue Eye, is unavailable in USB form until February. If you can't stretch to the Blue Eye calibrator – around £400 when it is available – you can use the bundled Colorific software. This gets you close enough to the right colours, but it's not quite good enough for on-screen proofing. Another useful feature is the hood. It may be simple and low-tech, but it improves image-quality greatly. The Natural Flat Mitsubishi tube already minimizes screen-reflection, and the hood completes the job. If your budget doesn't stretch to a LaCie monitor, get a cheaper model that includes the Colorific calibration software – and make a hood out of the box. Making your own hood might sound a bit like a *Blue Peter* project but you will be amazed at the results.

Apple USB ports
*You must plug your Studio Display in to your Mac because it needs to be controlled via USB. Pre-USB Macs are out of luck.*
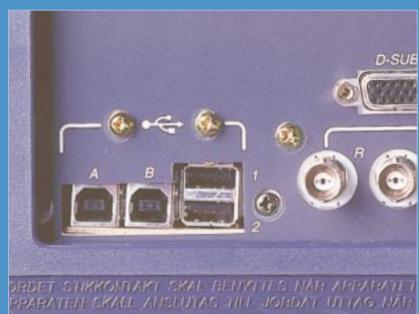
electron22
The USB ports on the LaCie monitor are needed for the Blue Eye hardware calibrator, available from February.


Eizo FlexScan
This sneaky trapdoor hides a forward-facing USB port, ideal for your keyboard and mouse.

Apple Studio Display 21

The back of the bulbous Studio Display looks like the nose of a killer whale – it really is huge. Because there are no handholds, don't attempt to pick this monitor up unassisted.

Once it's plugged in and sitting next to a nifty G4, the Studio Display looks much better. On image quality, it is designed to work in perfect harmony with the Mac. All adjustments are operated via a control panel on the G4, and calibration is automated by the G4. Other adjustments – such as pincushion and convergence – can be controlled via the mouse. These are great solutions. The only button you need is for ColorSync, which is on the front of the screen and opens the monitor control panel. This makes a mockery of other so-called simple button interfaces. No matter how well the competition designs their control-interfaces, you can't beat using a mouse.

There are drawbacks with the Studio Display 21. One is that, if you don't have a USB Mac, you won't get the benefits of the software controls. Also if you have a Blueberry Power Mac G3, the colours won't match. With the right Mac, though, this monitor is unbeatable, and is our outright Editors' Choice.

There are two ways of calibrating a monitor – through software, or hardware. Hardware calibration is more precise, but more expensive, too. If you're looking to do on-screen proofing, you'll almost certainly need to use a hardware solution. If you need to be confident you're in the right area with your colour, a software solution is good enough. There is one software solution that keeps cropping up in many of the monitors – and that's Colorific. This lets you use your own eyes to calibrate the monitor in a series of easy steps.
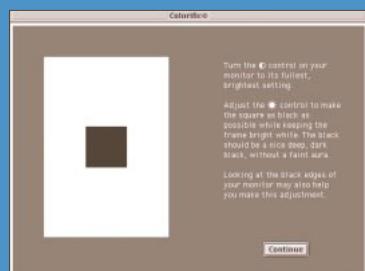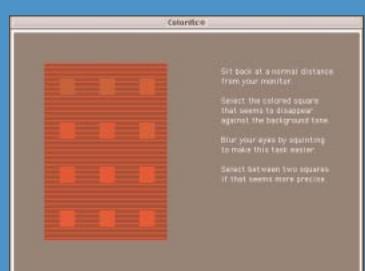

Step 1
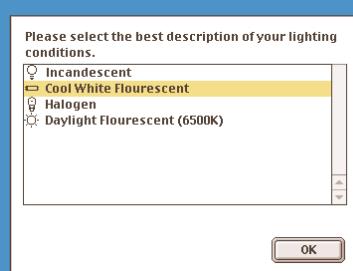*Crank up the contrast – adjust the brightness.*
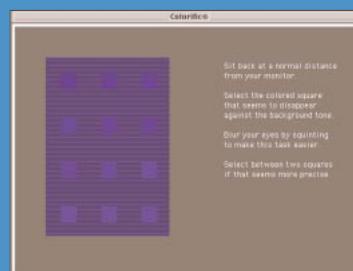
Step 2
Pick your favourite blue.
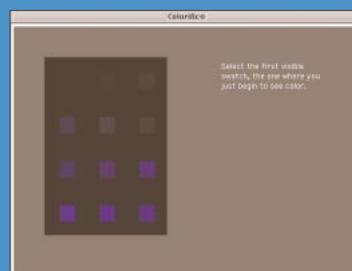
Step 3
Find the darkest square.

Step 4
Do the same with red, and then green.

Step 5
Choose the type of ambient light.

Step 6
Match the colour to the card provided.

Step 7
That's it – colour confidence in two minutes flat.

The best calibration system I have come across is Blue Eye, from LaCie. Unfortunately, the USB version of Blue Eye had not shipped in time for this feature, but should be available by February. In previous tests, however, the serial version of Blue Eye worked extremely well. It consists of a hardware colour-measurement device that sticks to the screen using a suction cup. Software then controls the monitor and the measuring device. This will only work with the LaCie electron22, but if you have more than one screen you can use the Blue Eye to calibrate each one – making the £400 price tag seem less harsh.

If you're serious about colour, £400 is worth spending, even for a single monitor. With a properly calibrated screen matched to your scanning and printing peripherals, you can perform on-screen proofing. On-screen proofing is something people have been reluctant to engage in, precision and quality has been improving steadily over the years.

One hurdle that monitors will never surmount is that light and ink form colours in fundamentally different ways. A printing press that uses CMYK (Cyan, Yellow, Magenta and blacK) has a different colour gamut to that of a monitor, which uses RGB (Red, Green and Blue). Getting the colours of a printing press to appear on a monitor is no mean feat. Even though a screen image is never going to be a perfect replica of a printed image we still need to get as close as possible. With the right tools – such as Blue Eye – we can get quite close.

also had perfectly flat screens, but sadly, the image quality isn't as good as the Mitsubishi or Sony models. Although they have the same CRT, it is the electronics, as much as the tube, that makes the image sharp.

The Viewsonic G810 was quality right out of the box – though the shadow-mask screen is, by necessity, curved. Its convergence and sharpness were extremely good. If it had included Colorific, it would've scored better in our tests. Many of the models include a USB hub (see the chart for the full list), which is a nice bonus. USB is now common throughout modern Macs and it doesn't take long to run out of ports. It's also handy to be able to plug a keyboard straight into a screen.

Eyeful tower

Apple has reintroduced the idea of industrial design in its latest range of computers, and carries the idea forward with its peripherals. The Studio Display looks a bit like a giant iMac, clothed in the Graphite colour scheme to match the high-end G4 Power Macs. The bandy stand is designed to let you hide your dinky Apple keyboard underneath the display – which will be taking up a great deal of your desk, anyway. All the other displays, except La Cie's electron22, are beige – a bit boring, but with no real impact on screen quality. The electron22 is a respectable deep blue, and also features a hood to keep external light nuisances from interfering with your screen view. While the colours don't match, this display looks fine standing next to both blue-&-white and Graphite Power Macs.

Macworld's buying advice

If you're half-serious about pro colour, you must have some form of colour calibration. Colorific is just about the only software solution around, so make sure your monitor comes with it – or, in the case of the Studio Display, with something better.

Measure-up for your new screen – you don't want to be working on a keyboard that is hanging off the edge of the desk.

Don't always go for the cheapest option. More expensive models, like the Studio Display and the electron22, may save you money in the long-run – by lasting longer. Advanced calibration means screen images stay sharper longer.

To avoid disappointment, try to view the monitor you want to buy first-hand, especially with the cheaper models. ▥

Eagle eyes

The general quality of monitors is now so high that it is difficult to tell them apart. As a consumer, you have less of a chance comparing images, because retail outlets rarely have a selection of monitors on display. In our labs, we do have the opportunity to compare models head-to-head. Even so, quality can be difficult to quantify. If you do get the chance to view monitors pre-purchase, here things to look out for.

Convergence (or mis-convergence)

When the cathode ray is directed onto the phosphor on a screen, powerful magnets direct it. The further it is pulled from the centre of the screen, the more difficult it becomes to aim properly. One of the problems associated with this is called mis-convergence – something that appears with age and that can effect the entire image. The simplest way to check for misconvergence is to display a grid of black lines on a white background.

Open a blank spreadsheet and make a grid black for a quick convergence chart. Now, with the chart covering the whole screen look for signs that the lines are splitting, especially in the corners. What should be a black line may have a slight green drop-shadow, or a red line above the black. This is misconvergence.

All monitors have controls to adjust convergence. Unfortunately, it isn't straightforward and there's a fair chance you could make the image worse. If you do can master convergence control, you may squeeze another year's life out of your monitor.

Focus

Blurring occurs in screen corners for the same reasons as misconvergence. If you look at a monitor and think the focus is imperfect – then avoid it, because it's unlikely to improve.

Alignment and Pincushion

Your screen-image can suffer from easy-to-fix distortions. The alignment settings include adjustments to things like rotation. Pincushion will adjust a picture bowed in the middle. All models have a selection of these settings. However, the less you need to use them the better.
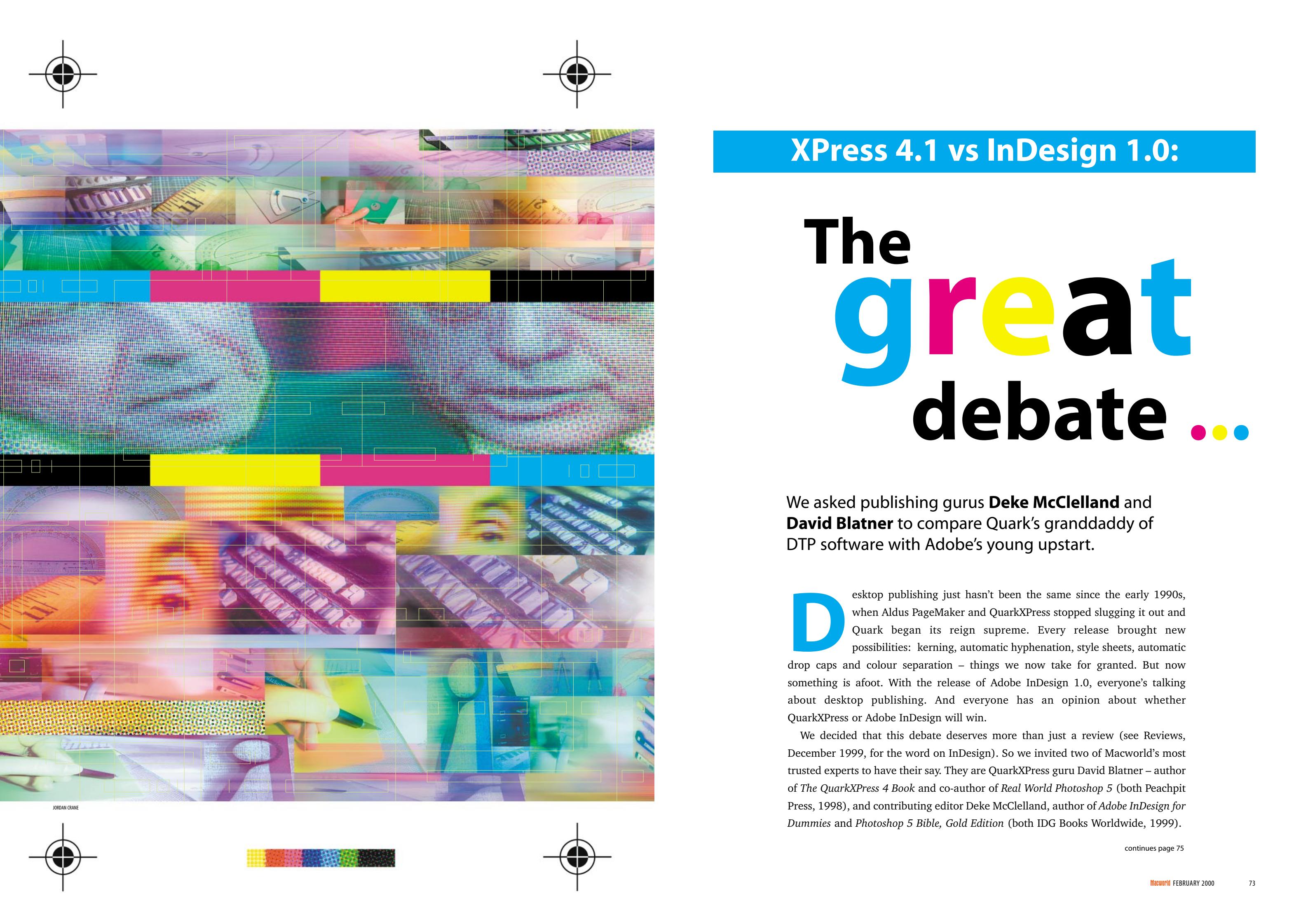
JORDAN CRANE

The
great
debate ...

We asked publishing gurus **Deke McClelland** and **David Blatner** to compare Quark's granddaddy of DTP software with Adobe's young upstart.

Desktop publishing just hasn't been the same since the early 1990s, when Aldus PageMaker and QuarkXPress stopped slugging it out and Quark began its reign supreme. Every release brought new possibilities: kerning, automatic hyphenation, style sheets, automatic drop caps and colour separation – things we now take for granted. But now something is afoot. With the release of Adobe InDesign 1.0, everyone's talking about desktop publishing. And everyone has an opinion about whether QuarkXPress or Adobe InDesign will win.

We decided that this debate deserves more than just a review (see Reviews, December 1999, for the word on InDesign). So we invited two of Macworld's most trusted experts to have their say. They are QuarkXPress guru David Blatner – author of *The QuarkXPress 4 Book* and co-author of *Real World Photoshop 5* (both Peachpit Press, 1998), and contributing editor Deke McClelland, author of *Adobe InDesign for Dummies* and *Photoshop 5 Bible, Gold Edition* (both IDG Books Worldwide, 1999).

InDesign sets type better

David:

There's no doubt that InDesign's greatest strength is in its typesetting. Features such as optical kerning (which better calculates optimal character spacing) and Multi-line Composer (which calculates line breaks across multiple lines to get better-looking justified type) are very impressive. Factor in the ability to insert "hidden" characters – frequently available in fonts but not accessible through the normal Mac keyboard – and support for the new OpenType fonts, and you have an extraordinary opportunity to set great type with less effort. It's not that you can't create most of these effects by hand in XPress; it's just that InDesign makes it real easy.

InDesign's text handling isn't all rosy, however. For instance, there's no way to justify text vertically inside a text frame (an easy task in QuarkXPress). What's more, InDesign's hard-core typography algorithms can require a lot of processing power, causing slower performance on older machines.

Deke:

I can't vouch for the experience of others, but my personal experience with InDesign is that it runs relatively briskly – particularly with long documents – on G3 or better machines. Still, I'm the first to admit that InDesign's recommended system requirements – the list includes a G3 processor, OS 8.5 or later, and 128MB of RAM – are excessive. (Quark recommends that XPress users have 10MB of RAM). I would be a bare-faced liar if I didn't admit that XPress fares better on slower systems.

But the topic is typesetting, not performance. (How quickly David has snared me into a tangential discussion! Clever boy, that one – I shall not underestimate him again). And there are a couple of points we have missed so far. InDesign automatically inserts the proper ligatures and small caps when a separate small-cap font is available. It splits out all designer styles for a typeface family to a separate pop-

up menu, so you can't accidentally choose a font style that doesn't exist. Its drop-cap controls are precise and easy to access. These are subtle, sometimes obscure enhancements, but they can make a big difference in the quality of your text.

It's easy to switch from QuarkXPress to InDesign

David:

As much as my InDesign-loving friend Deke would like you to believe this one, it unfortunately just ain't true. Even though Adobe claims that InDesign opens QuarkXPress documents, the program rarely does so without requiring significant clean-up afterward. And although InDesign does sport an XPress-like pasteboard, many other aspects will drive XPress users batty – from the creation and application of to the fact that leading is a character attribute instead of a paragraph-wide setting. Similarly, character styles and text wrap work significantly differently in InDesign, which will trip up unsuspecting QuarkXPress users.

Perhaps more important, however, is companies' investment of so much time and energy into building their infrastructure around XPress: finding reliable consultants, buying QuarkXTensions, training staff, writing AppleScripts, building a workflow. There's nothing inherently difficult in switching to InDesign, but given all these factors, I would certainly not call the process easy.

Deke:

It depends on how you make the transition. If you decide to go whole hog and transfer every document in your archives from QuarkXPress to InDesign, you're in for a lot of pain and manual labour.

But that's an unrealistic and unlikely approach. My advice is to
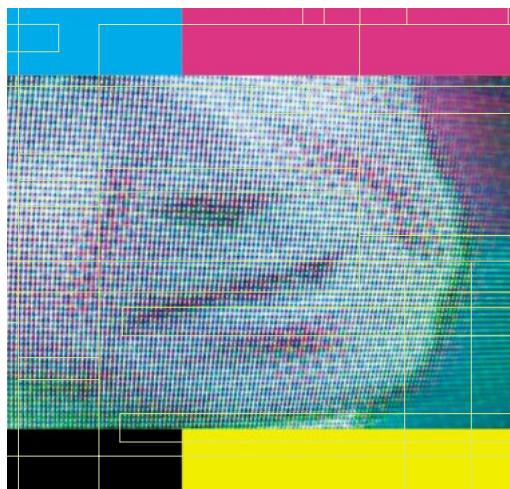
Clipping convenience
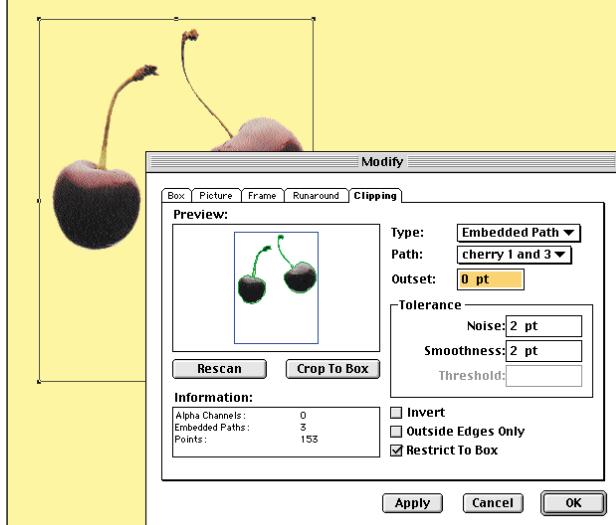
Quark knows how important clipping paths are to graphic designers, and XPress's Clipping dialogue box shows it (above, left). The ability to select multiple embedded paths, display points on the bézier path, and break the image out from the boundaries of the picture box enables designers to make the most of this technology. InDesign's clipping-path feature (above, right) is, by contrast, anemic.
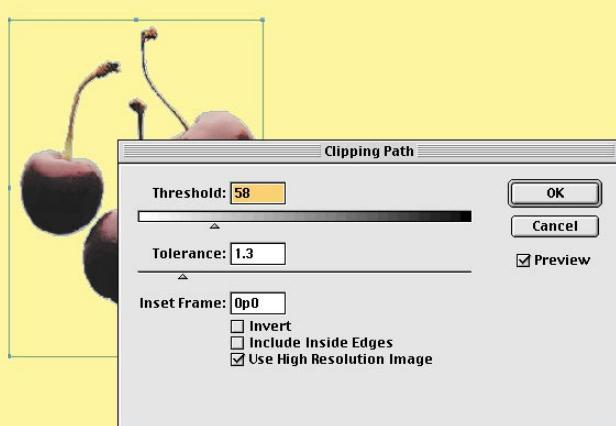
Subtle automation
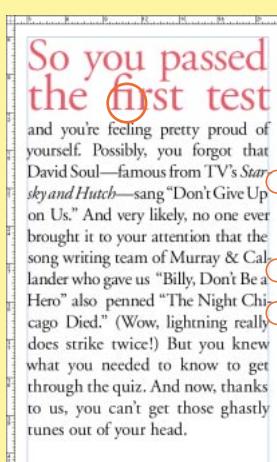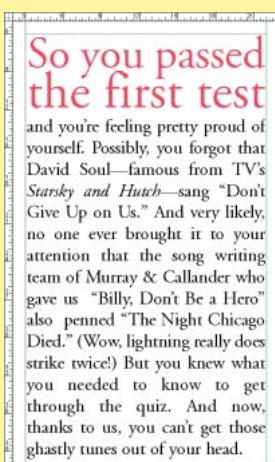
Because QuarkXPress hyphenates just one line of type at a time, the word spacing in the example on the left, becomes progressively looser as you read down the column.

InDesign's Multi-line Composer feature, on the other hand, continuously looks several lines ahead, ensuring more-consistent spacing. Add to this InDesign's other type features, including optical kerning, hanging punctuation, and automatic ligature replacement – all evident in the bottom example (results circled) – and you get an evenly balanced block of text.

change over incrementally, and primarily with new documents. InDesign does a first-rate job of opening and properly interpreting XPress templates. From there, it's just a matter of building new documents in InDesign. Not only is this the more sensible approach, but it's also the approach thousands of professionals took when transitioning from PageMaker to XPress.

Two things to keep in mind: First, when you consider that Quark doesn't share information on its native file formats, it's flat-out amazing how good a job InDesign does interpreting XPress files.

Line breaks and text wraps are bound to change, but all text, graphics, and basic formatting attributes will probably remain intact. Second, you can't stick with a program simply out of inertia.

Change will be hard, but it's the price you pay to make the leap to a modern desktop-publishing program.

CLAIM NO. 3
QuarkXPress is harder to use

Deke:
OK, I have to admit a bias up front. Although I don't particularly like PageMaker, I've long considered it to be easier to use than QuarkXPress. It isn't so much that XPress is unintuitive (although it often is); it's more that the interface is ill suited to "liquid workflow," that dreamy experience in which you sail through an application, hardly thinking about where tools are and how to get things done.

Among my complaints, XPress's odd-size palettes block your view of the page, and you have limited means for selecting tools from the keyboard. (Is it too much to ask for ⌘-I or the ability to simply press the I key to select the Item tool?) There are also few context-sensitive pop-up menus, and – most disgracefully – you're limited to a single undo. Meanwhile, cross-platform designers have to contend with some perplexing keyboard mismaps: on the Mac, ⌘-L checks spelling; on the PC, control-W does. Sometimes the option key corresponds to the PC's Alt key, other times to its control key – you just never know.

If not interface perfection, InDesign is certainly an improvement. You can select tools from the keyboard, navigate by using techniques common to all Adobe applications, and rest assured that the shortcuts you learn on the Mac will transfer key-for-key when you

have to do something on a PC. On a sour note, some shortcuts break down in text editing. But the ability to undo up to 300 consecutive operations makes up for that.

David:
I have to admit that Deke makes some good points here. On the other hand, if QuarkXPress is so hard to use, why are two million people using it? There's no doubt that XPress's interface has some unintuitive aspects (such as text-box linking), but I absolutely disagree that InDesign is any easier to learn or use. Granted, it's nice to use a program that looks and feels like it was written in the nineties (XPress still looks like software made in 1989). Yes, InDesign has multiple undos, dockable palettes, the ability to hang objects off the pasteboard, and really intuitive text chaining.

On the other hand, some interface issues baffle me – for example, having to look at three different palettes to figure out how to put a coloured border around a box. And when you want to open a palette, you have to search through the menus to find it (the palettes aren't all listed in the same menu, as they are in Photoshop and XPress).

The one that really gets me is scaling text boxes. Start with 12-point text in a box, and then scale the box up to 500 per cent. The Character palette still tells you that you have 12-point text in the box, even though it's obviously much larger. This is not easier to use; this is insane!

CLAIM NO. 4
InDesign's no good for quick-turnaround publishing

David:
Although InDesign 1.0 will certainly be useful for a few people, it's pretty clear to me that it will take a few revisions before it's really useful for the majority of users. QuarkXPress has spent years developing crucial production features such as long-document controls (indexing, books), object-level trapping, and text on a path.

Plus, as I noted earlier, the product itself isn't the only thing that counts anymore. How long will it take for service bureaus, printers, and third-party software (such as trapping and imposition software) to fully embrace and support InDesign? Everyone is familiar with QuarkXPress – faults and all – and that means more efficiency.

Deke:
It's been a mighty long time since I worked in a service bureau – frankly, longer than I care to admit. But I can tell you, back in my day, when a hot new program like InDesign hit the market, we busted our behinds trying to add some level of support, and I imagine the same is true today. Furthermore, Adobe is a significant enough player in the electronic-publishing market to make a major play at the service bureaus and commercial print houses. If you walk in the door and ask to print an InDesign file, my guess is the guy behind the counter will respond, "How fast?". Even if he balks, you have alternatives. I laid out a 48-page Photoshop 5.5 insert for my *Photoshop 5 Bible, Gold Edition* in InDesign, knowing full well that my publisher had no way to print it. To make the file foolproof, I merely exported it as a PDF file. The result: 48 pages, two spot colours, no problems.

CLAIM NO. 5
Creating PDF files is much harder in QuarkXPress

Deke:
Adobe's Portable Document Format is to multipage documents what EPS is to single-page illustrations – it's a means for trading printable files with anyone on the planet, without the need for the originating application. Sadly, XPress does not directly export to PDF. Instead, you have to shell out some extra cash ($249) for Adobe Acrobat, which can distil an XPress document printed to disk as a PostScript file. Contrary to early publicity, PDF is not InDesign's native file format. However, InDesign does permit you to export a file to PDF. The downside is that InDesign supports PDF 1.3 only, which requires Acrobat Reader 4 or later (the reader is a free download, so it's not

hard to get). Regardless, InDesign's PDF support is way the heck preferable to XPress's no support at all.

David:

Although I think InDesign's ability to export PDFs directly to disk without using Acrobat Distiller is great, I believe that QuarkXPress still has a leg up on the PDF front. Where InDesign's PDFs can be read only by Acrobat 4 Reader, a PDF made with XPress and Distiller can be read by the vast majority of Acrobat Reader versions out there (not all of us have time to go get every new version of a program, even if it is a free download).

More important, XPress 4.1 (available free with last month's CD) automatically builds hyperlinks for tables of contents and indexes. InDesign has no hyperlink functionality.

CLAIM NO. 6
Exporting HTML is easier in InDesign

David:

It's not that InDesign makes HTML easier; it's simply that InDesign has some more-powerful HTML features. Sure, InDesign exports pages as fully rendered HTML files, with columns, cascading style sheets, and linked graphics neatly organized in a folder. By itself, XPress 4.1 lets you export text only from a single story, and also lets you import simple HTML text, which InDesign doesn't currently do.

Personally, I wish that each of these companies would leave this sort of thing to third-party plug-ins – such as the £199 Extensis BeyondPress Computers Unlimited (Computers Unlimited, 0181 358 5858) – and focus energy on getting the rest of its program beefed up.

Deke:

Although David's brains are soft and watery, I find myself inexplicably compelled to agree with him – if only this once. InDesign does have some nice HTML features. Sadly, however, the program is incapable of

doing some very basic things, such as – most critically – creating hyperlinks beyond simple Next and Previous links that take you to other pages. So although you might find InDesign helpful if you need to repurpose a flier or another simple document as a Web page, be prepared to spend some time in BBEdit or an equivalent HTML-editing tool. Otherwise, you're probably better off rendering the page as a PDF file so you can post the document with all formatting intact (minus hyperlinks, of course).

CLAIM NO. 7
QuarkXPress's colour features win hands-down

David:

My brains might be a bit slippery, but I'm still cognizant enough to know that when it comes to colour neither InDesign nor XPress wins.

InDesign has excellent colour tools . . . with a lousy user interface. For example, you can choose from a plethora of colour libraries (Pantone, Trumatch, Web, and so on), but you can't access them from within the New Swatch dialogue box – rather, you have to open another dang palette and then choose from the list on a pop-up menu. Adobe also left out the ability to mix spot colours (as you can with QuarkXPress's Multi-Ink feature), which is very useful when building two-colour or three-colour documents.

Be that as it may, when it comes to colour management, building gradients, and the inclusion of a "Paper", InDesign's colour features stand up to or exceed those in XPress.

Deke:

I also don't think either program's colour features are anything to write home about – unless you're in the mood to write something nasty. InDesign lacks an eyedropper for copying colours between objects, and you can't drag-&-drop colours between palettes.

Creating spot-colour gradients is a pain in the neck: you have to separate palettes from their default locations in order to get much work done, and the Overprint options are squirreled away

Uneven Web features

InDesign lets you take a laid-out page (right) and export it as a fully built HTML document (left). The downside? You can't create hyperlinks in InDesign – no small drawback. In comparison, XPress permits you to export HTML as text only. But if you're willing to splash-out some extra green-backs, however, XTensions, such as Extensis BeyondPress (see above), can help.

The features war: QuarkXPress 4.1 versus Adobe InDesign 1.0

Comparing a brand-new product with one that's ten years old is rarely a pretty sight. But although Adobe acknowledges that its new program isn't going to win a features war right off the bat, InDesign fares better than you might expect. This list covers primarily features that exist in one program but not the other. However, in some cases, neither product includes the feature yet. Although many of these functions can be performed in QuarkXPress and InDesign if you buy commercial or shareware XTensions, plug-ins, or AppleScripts, we're ignoring them.

	QuarkXPress 4.0	InDesign 1.0
TEXT AND TYPOGRAPHY		
Character styles	Yes	Yes
Automatic ligatures	Yes	Yes
Hanging punctuation	No	Yes
Optical kerning	No	Yes
Multiline hyphenation and justification (H&J)	No	Yes
Vertical justification of text	Yes	No
Multiple-language support	No [A]	Yes
Ability to apply strokes and blends to text	No	Yes
Text on a path	Yes	No
Unicode support	No	Yes
Customizable tracking and kerning tables	Yes	No
PAGE LAYOUT		
Custom lines	Yes	Yes [B]
Display PostScript	No	Yes
Tables	No	No
Layers palette	No	Yes
Objects can extend past pasteboard	No	Yes
Master pages based on other master pages	No	Yes
Proxy tool in Measurements palette	No	Yes
Guides can be treated as objects	No	Yes
Document-page-to-master-page conversion	No	Yes
Assign specific space between objects	Yes	No
Duplicate objects as you transform	No	Yes
Suppress printout of objects	Yes	No
OUTPUT		
Create PDFs without Adobe Distiller	No	Yes
Preflight feature	No	Yes
HTML export	No [C]	Yes
In-software trapping	Yes [D]	No
Collects fonts with files for output	No	Yes
Printer's spreads	No	No [E]

	QuarkXPress 4.0	InDesign 1.0
GRAPHICS		
High-resolution screen previews	No [F]	Yes
Clipping paths in TIFFs	Yes	Yes [G]
Path operations (merge, union, and so on)	Yes	No
Edit imported vector art	No	Yes
Tonal correction for TIFFs	Yes	No
Convert text to outlines	Yes	Yes
Import PDFs as graphics	Yes	Yes
Select two or more points on a path	Yes	No
Text wrap around graphics	Yes	Yes [H]
Scissors tool to cut paths	Yes	Yes
PUBLICATIONS		
Create books (multiple documents as one)	Yes	No
Indexing	Yes	No
Tables of contents		
Opens other page-layout–program formats	No	Yes
Different-size pages in document	No	No
INTERFACE		
Editable keystrokes	No	Yes
Scriptable	Yes [I]	Yes
Tabbed palettes ('dockable')	No	Yes
Support for Mac OS 7 and 8	Yes	No [J]
Customizable tool preferences	Yes	No
Multiple undos	No	Yes
Precise placement of guides	Yes	Yes
Scale tool	No	Yes
Navigation palette	No	Yes
Multiple views of document	No	Yes
COLOUR		
Ability to mix spot colours	Yes	No
Gradient swatches	No	Yes
Tint swatches	No	Yes
Drag-&-drop color	Yes	No
'Paper' colour	No	Yes

(A) Requires £1,528 QuarkPassport. (B) InDesign has few line options and is more labour-intensive; you can specify only dash and space settings for individual lines. (C) Text only. (D) XPress's trapping feature isn't great. InDesign requires PostScript 3 printer with the In-RIP trapping option. (E) Will work if you install Adobe PostScript driver 8.6 (included on installation CD).

(F) Can preview TIFFs and JPEGs with Enhance Preview XT-SE, included with XPress 4.1 install. (G) Minimal support; requires conversion of path to frame shape. (H) Awkward; wraps only around frame shape. (I) Only on the Macintosh. (J) Requires Mac OS 8.5 or later.

by themselves in a palette labelled Attributes – as if attributes were somehow synonymous with stuff that doesn't go anywhere else. But lest you think XPress is a model citizen, think again. You have to create and name colours in a modal dialogue box – there's no provision for mixing a quick colour on the fly via a palette.

You can drag-&-drop a colour, but if you do, you can't undo. And gradients are limited to two colours. QuarkXPress beats InDesign when it comes to trapping, but InDesign wins points for its image-by-image control over colour management.

In other words, where colour is concerned, I'd say these two DTP programs are in a dead heat.

**CLAIM NO. 8**
InDesign is better at importing and editing graphics

Deke:

Not surprisingly, the maker of Adobe Photoshop and Illustrator has packed some amazing graphics-handling features into its new program InDesign. You can preview TIFF images and EPS illustrations at unlimited resolutions, essential when you want to precisely align an imported graphic with a line of type or another

Colour contrasts
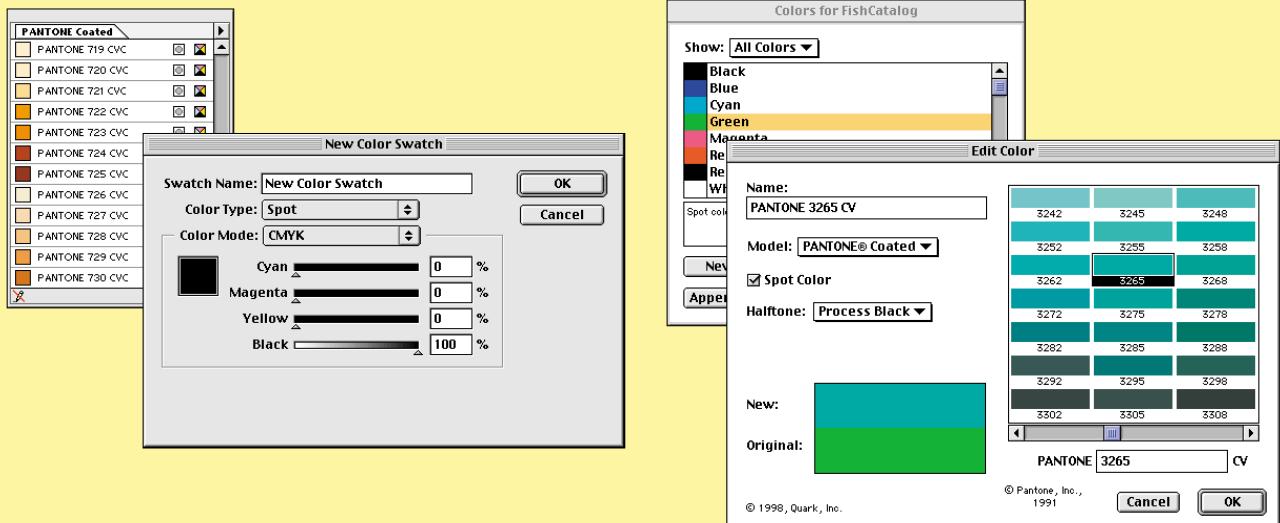
Overall, QuarkXPress and InDesign do a mediocre job with colour, but in some areas, XPress has the advantage. For example, both InDesign and QuarkXPress let you include Pantone, Trumatch, and other swatch-book colours in your documents, but InDesign makes it difficult. You must open a separate palette for each swatch book (left), you cannot drag-&-drop colours, and you cannot access these colours from within the New Swatch or Edit Swatch dialogue boxes. QuarkXPress's Edit dialogue box (right) is not much to look at, but it's much more versatile.

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page element. By comparison, the low-resolution previews in XPress and PageMaker are a cruel and inaccurate joke. InDesign also sports a first-rate Links palette for managing and embedding placed graphics.

You can jump right to an image in your document just by option–double-clicking on it in the palette. Finally, if you place a native Photoshop or Illustrator file, InDesign will interpret all the layers inside the file and even let you edit the graphic in the originating application. InDesign lets you apply gradients to live type – heck, you can even stroke type with a gradient. And finally, you can edit the clipping paths assigned to an imported graphic.

Unlike in XPress 4.0, you never run the risk of clipping an image with a random path that was never intended to be a clipping path in the first place. (Thankfully, XPress 4.1 accesses only Photoshop clipping paths. Users can still access working paths from the Modify dialogue box, but QuarkXPress will never assume that a working path is a clipping path.) On the downside, InDesign's path-editing tools are pretty rough. For example, you can't select more than one point at a time, making it difficult to move straight edges or other segments involving aligned clusters of points.

David:
InDesign is good at handling graphics, but QuarkXPress is better. For instance, XPress lets you choose a clipping path from among multiple embedded paths in a TIFF image. InDesign can read a single embedded path, but you have to convert the path into a picture box upon importing it. I agree with Deke that the ability to open native Photoshop and Illustrator files is nifty (even though I prefer Macromedia FreeHand), but I don't think this is necessarily a good thing to do in a real-world workflow. Call me old-fashioned, but I still much prefer to rely on TIFFs and EPS files.

CLAIM NO. 9
InDesign's plug-in architecture is revolutionary and will help it beat XPress in the long run

Deke:
Never were truer words plunked down upon a page! Current publishing programs have been notoriously slow to respond to market conditions. Product managers seek guidance from users; receive bucketloads of suggestions; and then sequester themselves in their offices, only to emerge 18 months or a few years later with a program that is, in many respects, obsolete on arrival. Yesterday's needs are met, but today's are not.

By contrast, InDesign's expandable architecture permits speedier reaction to users' needs. This spring, Adobe plans to ship InCopy, a separate program that works closely in conjunction with InDesign and permits editors to tweak and copyfit text while seeing the results of their efforts on a laid-out page.

Meanwhile, rumour has it that Adobe is already working on the next version of InDesign, which should answer the concerns of many current users. Quark has its work cut out for it.

David:
Sure, InDesign was written from the ground up to be highly extensible and modular, and yes, this is pretty cool. But when it comes to what this means in the real world, I'm not that excited. There are over 350 XTensions available for QuarkXPress today, and still only a small percentage of people use them.

Similarly, even though InDesign's modular nature means that Adobe can update the software more easily and frequently, this doesn't make users' lives any easier – it may mean more upgrades to manage and pay for, more stuff to learn, more chance of problems in workgroups, and so on.　MW

Lean, mean Web-machine

## Use Photoshop 5.5 to speed-up Web-page download times.

By Mike Wooldridge

Cramming too many bloated images into a Web page has always been one of the surest ways to scare away visitors. Images that have been saved in the wrong format, or compressed poorly, can slow download speeds to a crawl. That's why a key step in Web design has always been optimizing a site's buttons, photos, and other graphics before the site goes live.

Strangely, the most popular image-editing application – Adobe Photoshop – was less than ideal when it came to optimizing images for the Web. Because it lacked an efficient interface for tweaking and comparing compressed images: designers had to either install special plug-ins or defect to newer imaging applications – such as Macromedia Fireworks and Adobe ImageReady – that were built for Web design.

With Photoshop 5.5, Adobe has addressed many of the Web-related shortcomings of its flagship product. A new Save For Web option lets you easily preview, apply, and save optimization strategies for the main Web image formats: JPEG, GIF, and PNG. And, because Adobe now bundles Photoshop with ImageReady 2.0, you no longer need to buy two applications to get high-end imaging power and handy Web development options. (See the sidebar "Optimization on autopilot" for a tip on using ImageReady.) Armed with some basic knowledge about how image compression works, even Photoshop beginners should be well prepared to create image-rich sites that download quickly.

Trimming the fat

Image-compression formats take advantage of the fact that describing an image with mathematical formulas can be much more efficient than describing it one pixel at a time. It's analogous to defining an image of a green square as "a 10-x-10 grid of green pixels" as opposed to defining it as "one green pixel, then another green pixel, then another green pixel", and so on. Compression schemes often decrease the amount of space required to store an image
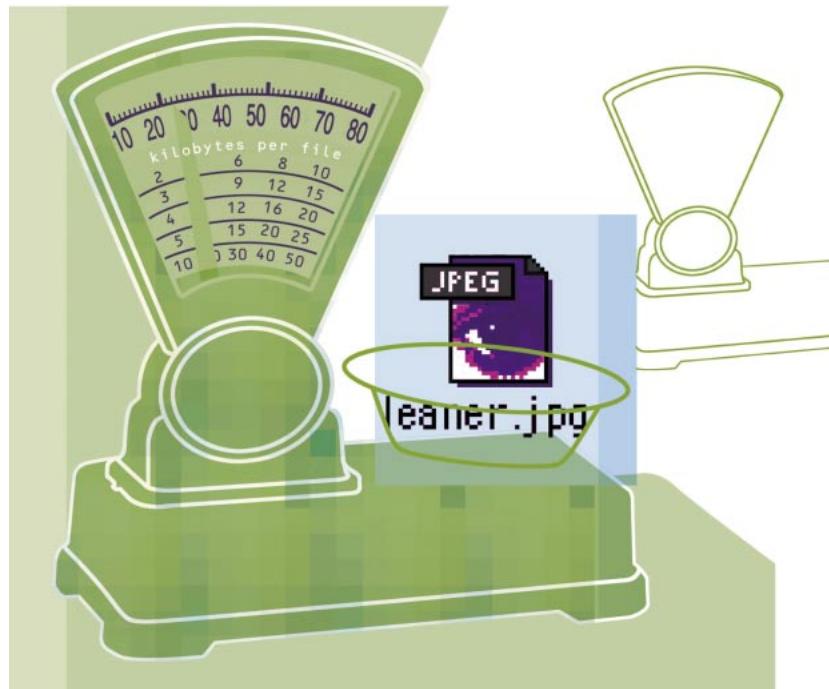
by 90 per cent, or more. (For a file-size comparison of the various imaging formats, see the sidebar "Which format? Compression basics".)

Different types of image compression use different formulas to compress information, and each has its advantages and disadvantages. Luckily, you don't have to be a mathematician to choose the best compression format for your images.

If your image is a photograph, you'll want to save it as a JPEG file – because the JPEG format can support millions of colours in a single image, and because it excels at compressing images with continuous changes in tone. JPEG's main drawback is that it's a lossy compression format, which means you lose a little information when you save an image as a JPEG file. The loss of information shows up as small artifacts that can multiply in intensity if you repeatedly compress the image in that format. When you save an image as a JPEG,

GEORGINA WATSON

Which format? Compression basics

The three image formats, available in Photoshop 5.5's Save For Web tool, compress the pixel information using different mathematical formulas, and each formula yields different results depending on the image in question. Here, for example, are the original and compressed sizes for these photographic and flat-colour images.

The JPEG format is the clear choice for photographic images. While the JPEG format uses several mathematical techniques to save file space, the most important one is Discrete Cosine Transformation (DCT). DCT saves space by approximating the arrangement of an image's pixels, and discarding the information that is least relevant to the human eye.

For compressing a flat-colour illustration, you're better off using either the GIF or the PNG format. This is because JPEG, though it may be able to shrink such an illustration to a similar file size, adds artifacts to the resulting image. This is because JPEG is a lossy compression format, meaning you lose some pixel information during the process. These artifacts will be especially noticeable in the solid-colour areas

of illustrations, which is why you want to use one of the lossless formats – GIF or PNG.

The GIF format compacts image information using a mathematical technique known as LZW compression – named for its inventors, Abraham Lempel, Jacob Ziv, and Terry Welch. LZW works by creating a dictionary of different pixel patterns that occur in an image; it then references the dictionary entries multiple times to re-create the image. This saves space because, while patterns tend to occur more than once in an image, they have to be stored only once in the dictionary. The GIF compression algorithm is patented by Unisys, which collects royalties on applications that use GIF compression.
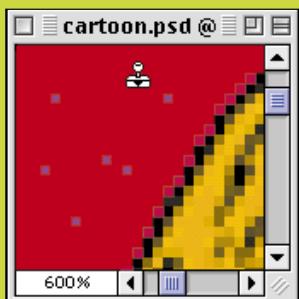
PNG compresses information using a technique similar to GIF's LZW compression, but it's different enough not to infringe on the Unisys patent. The fact that PNG is unpatented – as is JPEG – is one of the main reasons developers have pushed for its acceptance. A PNG file can have millions of colours, but you'll want to use much fewer for flat art, because doing so will decrease the final file size.

Flat-colour art
140-x-60 pixels
TIFF, uncompressed: 39.4K
JPEG, medium quality: 5.0K
GIF, 16 colours: 4.3K
PNG, 16 colours: 6.0K
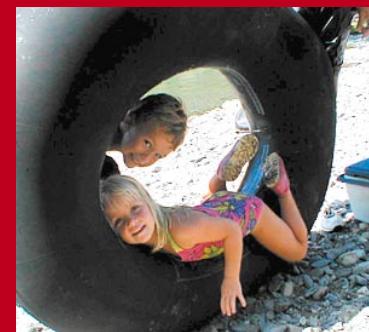
Photograph
360-x-270 pixels
TIFF, uncompressed: 307.6K
JPEG, medium quality: 15.6K
GIF, 16 colours: 25.4K
PNG, 16 colours: 29.3K

you select the amount of compression to apply. This involves deciding how many artifacts you can put up with in exchange for a small file size. Photoshop's Save For Web option lets you adjust the JPEG compression, and preview the compressed image side by side with the uncompressed original. This comparison feature was previously one of the advantages of using Fireworks and ImageReady.

If you really want to pack down your photos, Save For Web lets you add gaussian blur to your images before saving them. JPEG works best with continuous tones, so softening a picture's edges with the blur tool can help boost compression.

Web designers also deal regularly with illustrations with hard edges and areas of flat colour. These are best saved as GIFs – or as PNGs. GIFs are limited to 256 colours, which is usually enough for flat-colour illustrations – but not for many photos.

GIF is lossless, meaning it doesn't lose information during the compression process. However, a new lossy adjustment in Photoshop 5.5 allows you to increase compression by discarding information before saving your files as GIFs. (For more on this, see the sidebar "Put your GIFs on a diet.")

The most important part of optimizing compression with the GIF format is decreasing the number of colours in the image as much as possible – one of

Save For Web's options. Flat-colour buttons and similar graphics can often be reduced to 32, or fewer, colours and will still display fine. Other Save For Web functions, which include determining how a GIF's colour palette is selected and whether dithering will occur, have different – but minor – effects on file size, depending on the image.

A peek at PNG

The Save For Web option also lets you save images as PNG (pronounced "ping") files. PNG is the least-used compression format, mainly because it's the newest, and browser support for it has been patchy. Microsoft Internet Explorer 4.5 for the Mac doesn't support PNG at all; Netscape Navigator 4.5 supports PNG, but not all of its features.

The PNG format's advantage is that it can support millions of colours, like JPEG, but it's also lossless, like GIF. Therefore, it often generates a higher-quality compressed image than GIF – though it's slightly larger in terms of file size. Other advantages include its ability to store gamma information, which can compensate for different display brightnesses across operating systems, and partial transparency.

The PNG format should finally have full support in version 5.0 browsers, giving Web designers more reasons to consider PNG when optimizing images. **MW**

Mike Wooldridge is a writer and Web designer.

Put your GIFs on a diet

Combining Photoshop's save for Web with a few tricks of the trade will help you get your image files micro-sized. The following steps show how you can trim extra kilobytes off your GIFs so they'll download faster.

2 The most important part of reducing the size of a GIF file is to reduce the number of colours. Since the cartoon contained black lines and areas of flat colour, and it had no gradients, I was able to reduce the number of colours from 256 to 16 without degrading the image. This slimmed the file down to 4.3K.

1 I started with a scan of a cartoon illustration. I brought the image into Photoshop, chose the Save For Web option, and saved it as a 256-colour GIF file. The file size was 6.7K.

3 One way of reducing the size of a GIF file is to get rid of any stray pixels in the areas of mostly solid colour. I used the clone tool to get rid of some dark-green pixels scattered in the cartoon's background. When I resaved the file, its size dropped to 3.9K.

4 The final step was to apply the Lossy GIF feature, which is new in Photoshop 5.5. Lossy GIF takes advantage of the fact that GIF compresses better when pixel patterns repeat within an image. When you set the Save For Web Lossy GIF slider higher, Photoshop finds sequences of pixels that are similar and makes them identical. For this illustration, I set the lossy slider at 30. This reduced the file to a final size of 3.7K – 45 per cent smaller than the GIF file I began with.

Optimization on autopilot

Need to compress a folder-full of images, but are approaching a deadline? This is when ImageReady 2.0 – which is bundled with Photoshop 5.5 – comes in handy. ImageReady's droplets are automatic image-optimization schemes that appear as desktop icons. Here's how to create, and use, a droplet from inside Photoshop.

1 Click on the wide button at the bottom of Photoshop's Tools window. This will open ImageReady – if you have an image open in Photoshop, it will be imported into ImageReady.
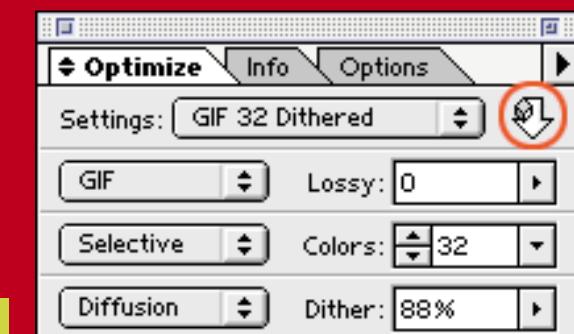
2 Select a compressed file format, from ImageReady's Optimize window, and adjust the compression settings to your liking.

3 Click on the droplet icon (A) in the upper-right corner of the Optimize window – the icon is the arrow pointing down. This will prompt you to name and save your droplet. In the screen shot (B), I've saved four different schemes as droplets in a folder.

4 To put your new droplet to work, drag-&-drop one or more image files – or folders – onto the icon. ImageReady will open, compress, and save new versions of the files.

Double-clicking on a droplet icon will bring up an ImageReady action menu that allows you to do further fine-tuning of your image-compression scheme.
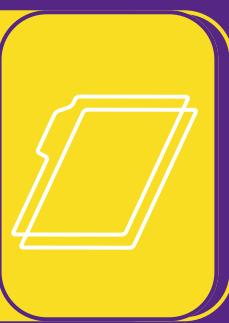
Infrared revival

You may have free
wireless technology
and not know it.
By Joseph Schorr

The infrared (IR) port included on most PowerBooks is – how can we put this politely? – not a feature most users appreciate. Frankly, I never even noticed the tiny IR port nestled on the back of my PowerBook G3 – until the day it happened to save my career. A colleague and I discovered, minutes before a seminar at a major trade show, that we needed to swap files between our PowerBooks in order to make a presentation. But neither of us had networking cables, SCSI adaptors, or Internet access. We'd left our floppy drives and portable Zip drives at home.

Star of the show

Then we remembered the humble IR port. Moments later we were zapping files back and forth through thin air – and attracting a crowd. Apple's infrared technology not only solved our little dilemma, but made passers by stop dead in their tracks. Several of them asked in disbelief: "My PowerBook can do that?" Yes, it can. IR ports are built into every PowerBook model released over the last four years, including the latest, bronze-keyboard, 400MHz PowerBook G3 – the port is a tiny, dark-plastic window on the back panel. The first-generation iMacs

also have an IR port. So, although it's true that Apple is phasing out infrared ports, and introducing far-more-powerful wireless technology with the AirPort, current PowerBook users may already have free, elegant, wireless technology right in their hands. Get familiar with it, and, in a pinch, you can transfer files to another machine, or connect to a network, without plugging in a single cord. Also, if you own a PalmPilot organizer, you can use that old infrared port to HotSync the PalmPilot with your PowerBook, without messing with serial cables or a docking station – see the sidebar "HotSync with no strings attached".

Going wireless

Even if you have an IR-port-equipped Mac, you won't be able to use the port if you don't have the appropriate system components installed and active. The IrDALib and IrLanScannerPPC system extensions should already be installed – they're a standard part of every modern PowerBook software installation.

Before making a wireless connection, you might need to choose an infrared-based protocol – either IRTalk or IrDA – in the
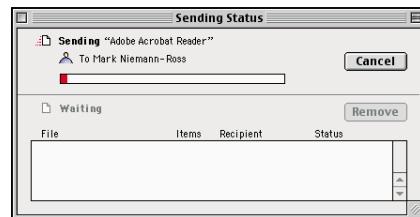
Ready to send
With Apple IR File Exchange, you can skip dealing with the Chooser, passwords, file sharing, and user privileges. As soon as an IR-equipped Mac is in range, a representative drop-folder icon, into which you can transfer files, pops into view. Use the Send To Everyone icon to send files to multiple Macs.


Files en route
When files are being beamed from one Mac to another, Apple IR File Exchange lets you monitor their progress in the Sending Status window.

HotSync with no strings attached

What's cooler than synchronizing the contacts, appointments, and notes in your PalmPilot with programs on your Macintosh? Doing it without wires, that's what. If you have an IR-equipped Mac, that supports the IrDA protocol, and a Palm III – or a later model – you can perform a HotSync without using a cradle or a modem. All you have to do is point the PalmPilot at the infrared port, and presto – wireless networking.

The secret to pulling this off is to install a handful of special infrared-enabling files that aren't part of the standard Palm MacPac 2 package. If you have the MacPac 2 CD, you'll find the files in the Palm Extras folder. Otherwise, you can download the Palm Extras folder from **www.palm.com/custsupp/downloads/macpacdl.html**. The files you need are in a folder called IrDA Files, inside the Palm Extras folder.

Once the files are in place, launch the HotSync Manager on your Mac. Then change the Local Sync Port setting, in the Serial Port Settings window, to Infrared Port. You also have to change
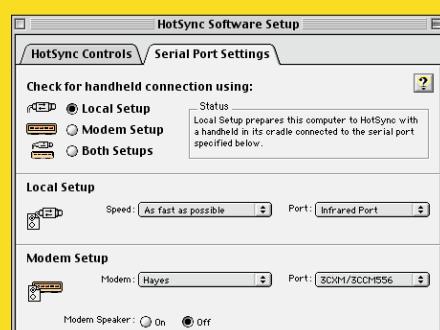
Wireless Palm
With the appropriate Palm Extras software on your Mac, you can configure the HotSync manager for an infrared connection.

the preferences on your PalmPilot, as outlined in the document that accompanies the files. When you're done, you can perform wireless HotSyncs with the IR port.

Clear labels

tip **Do you like to arrange window contents by their labels, but dislike Label colours?**
Parrish Ellison discovered that you can make a label transparent by changing its colour to white. To do this, choose Preferences from the Finder's Edit menu, and click the label's colour swatch. This opens the Color Picker window, where you can select a new colour. To make a label transparent in Mac OS 7.6.1 and earlier, use the Labels control panel and change the colour to black or grey.

Shut down on time

Q **Before starting an overnight download, I set the Energy Saver control panel, of Mac OS 8.6, to shut the computer down automatically, leaving enough time for the download to finish. But, when I return the next morning, the computer is always just sitting there, Internet connection dropped, but very much still on.**
Dan Ferguson

A If your Mac connects to the Internet via modem or ISDN modem, you must make sure the Internet connection will be terminated – not merely idle – at least five minutes before the Energy Saver's automatic-shutdown time. In my tests, even an open PPP connection – never mind an open Internet program – was sufficient system activity to prevent shutdown. You must also make sure none of your programs are set to answer incoming calls to your modem, including any fax software and the Apple Remote Access (ARA) server program.

If you're sure these conditions are not causing the problem, try moving the Energy Saver Preferences file from the Preferences folder of the System Folder, to the Trash. Then restart and specify a shutdown time that is at least 15 minutes after the current time. For an explanation of the 15-minute interval, see article 34505 in Apple's Tech Info Library (TIL; **http://til.info.apple.com/techinfo.nsf/artnum/n34505**). For a detailed description of Energy Saver's four-stage automated-shutdown process, see TIL article 22051 (**http://til.info.apple.com/techinfo.nsf/artnum/n22051**).

If the computer still won't shut down automatically, some third-party start-up software may be responsible. Try selecting the Mac OS 8.6 All set in the Extensions Manager control panel, restarting, and testing automatic shutdown again. If the problem disappears, then at least one extension is the culprit. You can isolate the extension by trial and error, using Extensions Manager, or Conflict Catcher (£81, Softline; 01372 726 333).

If all else fails, try removing the Energy Saver control panel and reinstalling it.

Big-slide show

Q **I'm trying to put together a slide show. Do you have any advice on which programs to use? I've scanned photos and put them into ClarisWorks – using its Slide Show command – which works OK, but the file is so huge I can't add any more pictures.**
Mike Hawker

A Instead of a program that stores a complete copy of each image in a slide show, choose a program that stores references to separate image files. I like iView Multimedia download,

$25 shareware from Script Software (www.scriptsoftware.com). With it, you can easily rearrange slides – by dragging their thumbnail views – and quickly rotate individual slides that were scanned sideways.

High-speed security

Q **I recently had a high-speed leased line Internet connection installed. Now that I have a static IP address, do I need a firewall, and if so, where can I get the software?**
Jim Hall

A By far the greatest risk to any Mac from the Internet – regardless of its connection time or IP configuration – is from applications and extensions containing viruses or Trojan horses. A good rule of thumb is to always be suspicious of unknown software you receive as an email attachment, find on untrustworthy Web or FTP sites, or receive as a Java applet or ActiveX item embedded in an unfamiliar Web page.

A computer is also at some risk from attacks by Internet hackers who use probing software to locate vulnerable systems. A full-time connection, and a static IP address, can heighten your vulnerability to these hackers by making your computer available to them 24 hours a day. However, Macs running OS 9, or earlier, with default settings aren't nearly as vulnerable to these attacks as Unix workstations.

It's a different story if your Macintosh provides services over the Internet. If you activate Web Sharing in Mac OS 8 or 9, or decide to use TCP/IP for file sharing, or program linking, in Mac OS 9, be sure to leave guest access disabled and give your registered users tough passwords.

Firewall software offers additional protection against hackers. With DoorStop ($299) or DoorStop Personal Edition ($59), from Open Door Networks (**www.opendoor.com), you can block all access** from the Internet, or set up filters to control access to your computer for specific TCP services and IP addresses. DoorStop can also log all attempts to access your computer from the Internet, so you know how often your IP address is being probed.

For those who share an Internet connection on a local network, most software packages include a firewall that blocks unsolicited access to computers on local networks. Vicomsoft (01202 293 233, **www.vicomsoft.com**) has several products of this type, including SurfDoubler (£34), SoftRouter Plus (£93 and up), and Internet Gateway (£134 and up). IPNetRouter, $89 from Sustainable SoftWorks (**www.sustworks.com**), is another.
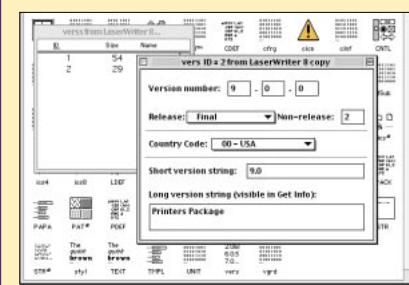
Cable-modem update

tip **Although some cable-modem users can access shared files and printers from their neighbours' Macs (as reported in November 1999's Quick Tips), Jim Williams, Nathan Tennies, and Jay Rolls – all of whom work for cable-modem service providers – insist that the majority of cable-modem users don't experience this security breach.**

Most cable modems can transmit only network traffic that uses the Internet's IP protocol, filtering out the AppleTalk protocol used by default for file sharing, printer sharing, and program linking. If you see your neighbours' computers or printers in your Chooser, you are using a cable

Customize Extensions Manager

tip The Extensions Manager control panel in Mac OS 7.6 and later can list and sort items by package, but items may end up in the wrong package, or no package at all. I found that Apple's free ResEdit utility (**http://asu.info.apple.com**) can put stray items into the proper packages, and, even create new packages. For

instance, I created my own Printers package.

To change an extension's package, make a copy of the extension and then use ResEdit to open the original version from your Extensions folder. Double-click the vers icon, and open the resource with ID 2. Enter the package name as shown in "Repackaging Extensions". If there is no vers resource with ID 2, you will have to create one by choosing Create New Resource from the Resource menu, or, by duplicating vers resource ID 1. This creates a new resource, generally with ID 128, which you can change to two by choosing Get Resource Info from the Resource menu. Then enter the package name as shown in "Repackaging Extensions".

Once you have changed the package name, close all ResEdit windows and save the changes. You can delete the duplicate version of the extension once you are sure everything is running smoothly.
Ryan Squires

Repackaging extensions
Change the package name of an Extensions Manager item by using ResEdit to open the item's vers resource ID 2, and entering the new name in the space labelled "Long version string (visible in Get Info)". Specify the package name exactly, capitals and all.

modem that can transmit protocols other than IP, and you should ask your cable-modem service provider to configure your cable modem to filter out AppleTalk traffic.

You can also rest assured that other cable-modem users can't snoop through your cable modem's transmissions, as if you were all on the same local network. They can't intercept your sent packets, because all cable modems send on one channel, and receive on another. They can't receive packets intended for you, because

only your cable modem is configured to pass packets bearing your IP address. For additional protection, cable-modem traffic is encrypted on its way to, and from, your service provider.

Of course, none of these safeguards protect cable-modem users from the general risks associated with having an Internet connection, or from the risks of using TCP/IP for file sharing or program linking, as discussed (left) in "High-speed security".

The infrared Macs

No need to wait for an iBook in order to experience some of the freedom of wireless networking. If you have any of the Mac models listed below, you've already got everything you need in order to make infrared connections.

PowerBook 190
PowerBook 1400
PowerBook 5300
PowerBook 2400
PowerBook 3400
PowerBook G3
PowerBook G3 series
Original Bondi Blue iMac

Infrared control panel. Older PowerBooks don't have an Infrared control panel because they support only IRTalk, an Apple-only technology, whereas the newer models support IRTalk and IrDA – an industry-standard protocol. The IR-equipped iMacs support only IrDA. For the quickest hassle-free PowerBook connections, choose IRTalk. Next, open the AppleTalk control panel and choose Infrared Port in the Connect Via pop-up menu.

Nearly there
Now you're almost ready to start beaming files. Launch Apple IR File Exchange, which comes installed on every Mac that has an IR port. You'll find it in the Apple IR File Exchange folder, inside the Apple Extras

folder on your hard disk. The IR Sender window will open and display the message "Nobody in Range". Point another PowerBook's IR port at your port, and an icon representing the other machine will appear in the window. To transfer a file, just drop it on the drop-folder icon in the window. Received files automatically show up in the IR Receiver folder – inside the Apple IR File Exchange folder.

Infrared connections aren't terribly forgiving when it comes to placement of the IR ports. Unlike the IR communication between, say, your VCR and remote control, a Mac-to-Mac infrared connection requires careful placement of equipment. Place the two PowerBooks opposite each other, no more than 2 or 3 feet apart, with the IR

ports directly lined up. Apple says the ports can pick up a signal within a 30-degree radius, but anything other than a straight shot between the ports is dicey. But, here's a secret that will amaze your friends and prove that you're a true wireless-networking pro: you can make your IR connection turn corners simply by diverting the signal with a pocket mirror.

IR networking
Apple IR File Exchange is fine for simple file copying, but you can also use an infrared connection for standard AppleTalk point-to-point networking. After setting the Infrared and AppleTalk control panels and putting the PowerBooks into range of each other, just open the Chooser and click on

the AppleTalk icon. You should be able to log onto any PowerBook within range and mount shared volumes, just as if you were connected via LocalTalk or ethernet.

Granted, Apple's infrared technology doesn't give you quite the freedom of an AirPort-equipped iBook. Infrared throughput, for example, maxes out at a modest 4Mbits per second. And, forget about roaming through your backyard with an infrared connection. But, you never know when that tiny wireless port may be just what you need to get you out of a bind.   **MW**

Joseph Schorr is a co-author of *Macworld Mac Secrets*, *fifth edition* (IDG Books Worldwide, 1998).

Peter Worlock

The much-touted QuickTime TV faces
serious 'Net streaming-media limitations

Out of its width

For much of the last year, I have been enjoying the dizzy heights of broadband Internet access at home, thanks to BT's ADSL trial in west London. The trial is now in beta phase, heading towards a general rollout of the service later in the spring, so – at least in some of the country's larger cities – the prospect of high-speed Web access beckons.

Now, a few months ago, Steve Jobs announced a concept called QuickTime TV (don't worry if you've forgotten: it was somewhat overshadowed by the launch of the iBook, and the Airport wireless networking system). After dismissing QuickTime TV at that time as little more than a marketing gimmick with little substance, I promised to return to it later. It makes an interesting adjunct to the subject of ADSL.

ADSL is one variant of a group of services called Digital Subscriber Line. The 'A' part stands for asymmetric because data flows at different speeds between your desktop system and the Web server. BT's first offering in the trial offered two megabits per second (Mbps) from the Web to you, but that has been downgraded in the beta phase, to 512Kbps. Uplinks, from you to the Web, run at 256Kbps. There are other forms of DSL, including symmetric, but ADSL appears to be BT's preferred technology.

Given the hype about high-speed access that you get from all corners – including the national newspapers and overpaid US analysts – you might think that broadband speed was the bee's knees. But here's a curious thing: it isn't. For me (and for many others I've swapped notes with) the real benefit of ADSL is that, because you pay a flat fee, regardless of connection time, data transferred, or any other consideration, you just leave it on all the time. Fire it up in the morning when you switch on the computer, and leave it on all day.

As a consequence, if you want to download a huge file, you simply start the transfer running and then get on with something else. It really doesn't matter if it takes ten minutes or ten hours because you're not running up a phone bill.

Don't get me wrong: high-speed access is terrific. Even at ADSL's slower uplink, I'm still able to send XPress files and Photoshop images to my clients at twice the speed of duplexed ISDN. And downloading Quake game demos and other mission-critical software updates is ego-strokingly fast. But – and it's a huge 'but' – there's virtually no-one on the Web serving at 2Mbps, and few offering even 512Kbps. Even when you find a really fast server, you're often competing for bandwidth with hundreds, or thousands, of other Web users.

This leads me on to the subject of QuickTime TV, and streaming media in general.

Streaming media is one of the Web's hot concepts at the moment. For some time Real Networks had the market to itself with its RealAudio technology, and then Microsoft jumped in with Windows Media Player, before Apple – with the arrival of QuickTime 4 – made its own pitch with QuickTime's streaming capabilities.

There are plenty of other contenders (notably Macromedia with Flash and Shockwave for more specialized streaming applications) but Real, Microsoft and Apple – in that order – are viewed as the heavyweight contenders.

Streaming media is a good illustration of the pros and cons of low and high bandwidth Web connections. For Web audio, even a 56Kbps modem link is just about good enough. It isn't CD quality, but it matches what we all get out of our car radios most of the time. 'Web radio' is a winning concept.

Web video, on the other hand, is a different proposition. Even at ISDN speeds, frame rates and resolutions are too low to be considered anything better than 'poor'. But with ADSL, streaming video must be great, right?

Well, not exactly, because most of the streams are targeted at the common speeds of modem or ISDN. And even when you find a true high-speed stream, you need to have all three media players installed because all content providers are playing their own favourites among Real, QuickTime and Windows Media. And even at 512Kbps, the media doesn't stream quickly enough for anything approaching TV-quality, full-screen, full-motion video.

Because I've run out of space with plenty more to say. So tune in again next month, when we'll find out who has the best streaming media technology – and why QuickTime TV is still nothing more than a marketing concept.

And in the meantime, write to your MP demanding flat-fee Internet access for everyone.   MW